IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

CARDIAQ VALVE TECHNOLOGIES, INC., Plaintiff -VS- NEOVASC INC., et al, Defendants	)	CA No. 14-12405-ADB Pages 12-1 - 12-172

JURY TRIAL - DAY 12

BEFORE THE HONORABLE ALLISON D. BURROUGHS
UNITED STATES DISTRICT JUDGE

United States District Court
1 Courthouse Way, Courtroom 17
Boston, Massachusetts 02210
May 17, 2016, 9:32 a.m.

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I N D E X

WITNESS	DIRECT	CROSS	REDIRECT	RECROSS
CARLA MULHERN				
By Mr. Graves:	12-17			
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P R O C E E D I N G S

THE COURT: Good morning, everyone. You can sit. I think Jonathan came out and gave everybody drafts of the standard part of the charge. What we'll do is -- I mean, my guess is, none of that's going to be too controversial, but I'm happy to have you wordsmith it. So I've given it to you, and we'll just take a break if and when you close today and give everyone a chance to read through it, and hopefully we can do that.

09:33 We're still wrestling with some of the issues on the rest of it. We will have a draft for you sometime today. We'll see when you rest, but I'm sort of hoping that you rest -- at some point you rest. I can give you an hour off to go and read the charges, and then we can come back and go through them. If we don't end up with that much time, we'll figure out how we're going to do it.

So the part that I've already given you, there's usually a standard charge on stipulations, which I have taken out. I think the only stipulation is that the nondisclosure

09:33 agreement is a contract. Tell me if I'm wrong about that. So what I thought we would do is, instead of saying they stipulate to that and then define stipulation, just say the parties agree it's a contract and skip the instruction.

MR. GRAVES: Yes, your Honor.

THE COURT: And then I did not add back in language,

although I'm still somewhat inclined to do it, about the fact that -- just to correct what I told them in the beginning because I'm sure they've seen there are transcripts, just to say that were some transcripts that have been prepared, and if there's a discrete portion that they want to see and they ask for it, we may or may not be able to accommodate them, but just to sort of acknowledge -- I know they know there's transcripts, right? We've all been staring at them. So I don't want to promise them that we'd deliver a transcript because we may ultimately not, but just to acknowledge the fact that some transcripts were prepared and some might be available if there's something discrete, but I leave that to you.

09:34

And then in terms of the trade secrets, I'm not sure if you have an exhibit that you're going to agree on that lists out the trade secrets, or you want me to cover it in the narrative, or how we're going to do that.

MR. SGANGA: Well, we had thought that your Honor could reference the document, that trade secret disclosure document.

09:34

THE COURT: Well, that's what we've done. That's what we've done, but it seems that there's some dispute over which document that should be.

MR. BOEHM: Your Honor, there's actually a third exhibit than either of the ones in the original jury instructions. I have the number, I think, the one that the

parties have been using, if you can just give me a second.

THE COURT: Okay. And then my intention at the moment -- and, again, I'm happy to hear you on this, although it's already been pretty well briefed -- I think on the 93A, my intention is to send it to the jury for an advisory opinion. I don't think it should be a binding opinion on the one hand. On the other hand, with them sitting here, I don't see any harm in getting the advisory opinion. So that's what I'm sort of thinking on that. And I don't have anything -- we're sort of, again, still working through this, but there's nothing relevant to the inventorship claim that I was intending on putting into a specific interrogatory at this point; but if there's underlying factual issues that you think should be resolved, I'm happy to hear you on that.

09:35

MS. LEA: We do, your Honor. In fact, we believe we have a Seventh Amendment right to have the underlying factual issues resolved.

THE COURT: But what do you think is the underlying factual issue?

09:36

MS. LEA: Whether Dr. Quadri and Mr. Ratz significantly contributed to the claimed invention.

MR. BOEHM: Your Honor, that's the heart of the ultimate issue. And the first thing I would say is that significance, the "significant contribution," that's a term of art in inventorship law. It's not an everyday sort of comment

how we think about significance. It factors in what was known in the prior art and the scope of the claims as a whole, which are also questions of law for the Court to consider. So we absolutely disagree that that type of interrogatory could go to the jury in language like that that the plaintiff has proposed or otherwise.

THE COURT: Well, let me just ask you, as a practical matter, do you all think that the invention -- I mean, it seems to me, as a practical matter, that you could make a pretty darn
09:37 good argument that the invention claim and the trade secrets claim rise and fall together. I mean, I know the law is not the same, and I know the inventorship can be a broader concept.

MS. LEA: We do believe that it's based on the same factual issues, your Honor, as to what Dr. Quadri and Mr. Ratz contributed and shared with Neovasc and what Neovasc used and put into their patent. So we definitely believe that there is overlap there, and that is why we have a Seventh Amendment right on the question of inventorship to go to the jury.

MR. BOEHM: We absolutely disagree. Whether something
09:37 is used by the defendants in its development and whether that rises much further to the level of anything inventive or an inventive contribution is an entirely different set of legal issues, questions of law that would have to follow from whether anything was used in the development process. Whether something is put into the patent claims or not is no different

than whether it's in the product or whether it's shown at trade shows or things like that.

THE COURT: I have the briefing on the inventorship thing. I haven't actually read it yet. They're just all sitting here in a pile. So I'll go back and do that, but I just wanted to sort of --

MR. BOEHM: May I make one comment on the brief that they filed last night?

THE COURT: Yes.

09:38 MR. BOEHM: It will be relatively brief.

THE COURT: That's fine.

MR. BOEHM: In the broad universe of patent cases, there's a small subset in which inventorship issues are presented to the jury. That subset is when patent invalidity is at issue because patent infringement is charged. In other words, when a plaintiff has a patent, charges the defendant with infringing that patent, inventorship may be raised as a particular species of defense in that type of case. That's not this case at all. That's not anything that's been pleaded or

09:39 alleged.

THE COURT: I have the briefs. I just haven't read them, so I'll give you a chance to argue on it again once I've read them.

MR. BOEHM: The cases that they added to their brief last night, the cases they raised is a different species than I

was talking about. It's a patent infringement action where a specific defense was raised, not at all apposite to this case here. Thank you, your Honor.

THE COURT: Okay, as a practical matter I get the law, the legal issues, but are you envisioning any scenario under which the inventorship claim and the trade secret claim go in different directions? I mean, if there's no theft of trade secrets, are you still going to press the idea that they should be named inventors? I mean, I understand the law, that they can be different, right, because the trade secret, you could find that they haven't met one of the technical requirements of the statute and that they're still -- but as a practical matter, don't they sort of rise and fall together?

09:39

MR. SGANGA: As with the contract, your Honor, too. I mean, it is a use of the confidential information for Neovasc's benefit. Them disclosing it to the Patent Office and them trying to obtain the patent rights for themselves is a use of our confidential information that was expressly prohibited, so they are intertwined as a result of that. And it may well be that the information was revealed at some point. You know, that's Neovasc's defense is that at some point it became revealed, and therefore it was not valuable to them as a trade secret, but that doesn't preclude it from having contributed to the invention.

09:40

THE COURT: Again, as a legal matter, I understand

that, but as a practical matter, are you going to press the inventorship if you lose on the trade secrets?

And I have the same question for you all: Are you going to concede the inventorship if you lose?

MR. BOEHM: No, no. Whether they fall and whether they rise are entirely different. If the trade secret claim falls, it may very well be that the inventorship claim falls, but there are so many additional legal requirements --

THE COURT: So you think if one falls, they both fall, but if one succeeds, then they don't both succeed?

MR. BOEHM: Painting very broadly with that brush, your Honor, I think that's right.

THE COURT: That's a very convenient view of the world.

MR. BOEHM: It's how the law sets this thing up.

THE COURT: It seems like the law on that actually goes more their way than yours, but --

MS. LEA: We do have the jury here. These issues have all been argued to the jury, and we believe it is just best to submit the questions to the jury. We have given your Honor several different options for the question of inventorship, underlying factual questions to go to the jury, and we can talk about those later once you've had a chance to read our briefs.

THE COURT: Okay, all right.

MR. BOEHM: Just to circle back on the exhibit, the

trade secret claim identification exhibit number that I believe all the parties have been using is 1157, not 1002 or 190, which were the two exhibits listed in the proposed jury instructions a few months ago.

THE COURT: If I wanted to put my hands on 1157, what would be the easiest way to do it?

MS. LEA: And does that include all of the attachments?

MR. BOEHM: No.

MS. LEA: Okay, and so that's where we have a

09:42 disagreement, your Honor.

THE COURT: Okay, so you're all content having this be referenced and then be referenced for the jury as the trade secret document?

MS. LEA: So, no. We would like for the document with all of the attachments which are part of the trade secrets to be the document that's referenced.

THE COURT: So that's what? That's 1157 plus what?

MS. LEA: You know, your Honor, I don't have the number.

09:42 MR. BOEHM: It's a couple of big huge binders.

MS. LEA: 1219.

THE COURT: They tell me that's not going to be in here.

MS. LEA: Your Honor, we're getting the number for the complete revised trade secret disclosure.

THE COURT: What I have for 1219 is --

MS. LEA: It's not the right number, your Honor.

THE COURT: Okay.

MR. BOEHM: And our position is simple: Those communications and CAD files and things like that were charged as examples of the disclosures between the parties, but the trade secret claim identification itself was defined entirely distinct from those, so we would go with just the Exhibit 1157.

MS. LEA: And we wrote the trade secrets to include --

09:44 MR. BOEHM: The other point on that, your Honor, is that we would ask that any instruction like that refer to the "trade secret claims" or "claimed trade secrets" or "alleged trade secrets," language like that.

THE COURT: I think we do that. If we missed one, we missed one, you can fill it in, but I think we have conceptually done that.

MR. BOEHM: Thank you, your Honor.

MS. LEA: Okay, so we have it broken down into multiple exhibits. It's 1157 through 1219.

09:44 THE COURT: All right, so all those exhibits, they're all admitted into evidence already?

MS. LEA: Yes.

THE COURT: I mean, again, I'm happy to -- I need to think this through a little bit, but what I'm inclined to do is reference 1157, and then if you during your closing argument

want to explain to them what that means, it's 1157 plus all the supporting documentation, that's fine, but --

MS. LEA: Well, we drafted the trade secrets to include -- each of those e-mails themselves is the trade secret. So, I mean, we have the revised trade secret disclosure, and it incorporates all of those exhibits.

THE COURT: Okay, let me think about that.

MR. BOEHM: I just remind the Court that they've taken the staunch position over and over that they have six trade secret claims, not 120 documents.

09:45

THE COURT: Right. No, I know, I know. And also I'm worried about, it's a lot for the jury to have to kind of -- like, I'm not sure what they're going to do with all of that other than to see that there's a lot. You know what I mean?

MS. LEA: Well, to see the specific exchanges between the parties of the trade secrets --

THE COURT: They are going to be able to see those, but there's six trade -- I mean, I could even see sort of like doing this with one page, saying that the first trade secret is Rev. C, the second one is Rev. D. I mean, I actually, sort of even 1157 is more than I might have done on my own, although I'm willing to give you that, and I understand why you want it.

09:45

MS. LEA: I think the point is to have the exhibit numbers in the jury instructions so that the jury can easily find the complete trade secret disclosure, which includes the

attachments.

THE COURT: I want to think about that, but, okay, now I know your positions on it.

Okay, those are sort of the -- we'll have more of this because we're still working through some of these. Anything else on your minds this morning before we bring the jury out?

MR. BASKIN: Your Honor, we have a couple of exhibits to admit, I believe just one actually.

THE COURT: Okay.

09:46 MR. BASKIN: And that's Exhibit 178 which was shown during Mr. Michiels' deposition yesterday.

(Exhibit 178 received in evidence.)

THE COURT: And where are we on 2145, 161, and 2808?

MR. BASKIN: I believe -- I don't know if they're still entertaining their objections.

MS. LEA: We are.

THE COURT: Okay, I will have to go back and sort those out then.

MR. BASKIN: And, your Honor, I have with me a binder

09:47 with all of the deposition clips that were played in transcript form and a CD of them as well.

THE COURT: That's fine. You can hand those to Karen.

Karen, have you been talking to them about how the exhibits are going back to the jury, all on CD or hard copy or both? What are we doing?

(Discussion between the Court and Clerk.)

THE COURT: So all the exhibits will go back on a CD.

MR. BASKIN: Your Honor, we're preparing that CD now. I have been informed that there are some issues with putting Excel files on that CD, and we're working with the IT people to figure that out.

THE COURT: Okay, so that's going to be the agreement, that everything goes back on the disk versus hard copy, or hard copy is going back as well?

09:47 MS. LEA: I would suggest that we do both.

THE COURT: I mean, I'm happy to rule on that, but if you want to see if you can all work that out --

MR. BASKIN: We'll discuss it and let you know.

THE COURT: I mean, I'll rule on it, but if you can have some agreement what's going back to them, I think that would be --

MS. LEA: Sure.

THE COURT: Have you all seen the setup back there?

MS. LEA: No.

09:48 THE COURT: Basically they have a screen like a TV screen that's mounted to the wall, and there's one screen. And they can quick through and put up whatever they want, but there's not any way for them to look at two things at the same time unless there's hard copies back there as well.

MR. BASKIN: I would just note that the binder I

handed up with the deposition clips we've marked as Exhibits 5055 through 5060. We don't intend for those to go back to the jury, but in case the jury requests transcripts, they'll be on the record.

THE COURT: Anything else? All right, we'll bring the jury out in about ten minutes, so do as you will.

MR. SGANGA: Thank you, your Honor.

THE COURT: Maybe start taking a look at that preliminary charge.

09:49 (A recess was taken, 9:49 a.m.)

(Resumed, 10:02 a.m.)

THE CLERK: All rise for the jury.

(Jury enters the courtroom.)

THE COURT: Thanks for being here, everyone. Mr. Graves or Mr. Flynn.

MR. GRAVES: Your Honor, at this time defendants call our final witness, Carla Mulhern.

CARLA S. MULHERN

having been first duly sworn, was examined and testified as

10:03 follows:

THE CLERK: Will you please state your name and spell your last name for the record.

THE WITNESS: My name is Carla S. Mulhern, M-u-l-h-e-r-n.

THE COURT: You have to get right up to that

microphone.

THE WITNESS: Can you hear me now?

THE COURT: Yes.

DIRECT EXAMINATION BY MR. GRAVES:

Q. Well, good morning, Ms. Mulhern. Can you introduce yourself to the jury, please.

A. Yes. My name is Carla Mulhern, and I'm a managing principal with Analysis Group in the Washington, D.C. office.

Q. And if we can put up on the screen, Ms. Mulhern, did you

10:03 prepare a CV for the analysis that you've done in this case?

A. Yes, I did. This is a copy of my CV that was attached to the expert report that I submitted in this case.

Q. And briefly, Ms. Mulhern, what do you do as a managing principal at Analysis Group?

A. I'm an economist, and I specialize in the application of economic principles that arise in the context of litigation, cases such as these. Also I specialize in the valuation of intellectual property.

Q. And can you explain in general what that involves.

10:04 A. Yes. It involves -- in many cases it involves the analysis of damages, and it also involves the valuation of intellectual property, which covers things like trade secrets, patents, copyrights, trademarks, and it covers a variety of industries, including medical devices and in the healthcare field.

Q. For how long have you been doing this, Ms. Mulhern?
A. More than 25 years.
Q. Did you prepare anything for your testimony today?
A. Yes. I prepared some demonstrative slides to assist in my testimony.
Q. Let's start with your background. What is your educational history, Ms. Mulhern?
A. I have a bachelor's degree in mathematics from Bucknell University in Lewisberg, Pennsylvania, and I have a master's
10:05 degree in economics from the London School of Economics and Political Science.
Q. Are you a member of any professional associations?
A. I am. I'm a member of the American Economic Association and the Licensing Executive Society.
Q. And how are you involved in those two associations?
A. With respect to those associations, I attend meetings, I subscribe to publications, and occasionally I speak at conferences.
Q. Can you summarize for us your work after you finished
10:05 graduate school.
A. Sure. After finishing graduate school, I came back to Washington, D.C. in 1989, and I started working with National Economic Research Associates, called NERA for short. I worked there for five years. Then I moved to Putnam Hayes & Bartlett, also in Washington, D.C., and then in 1997 I joined Analysis

Group, my present employers.
Q. And what did you do over the years at those three jobs, Ms. Mulhern?
A. All three of these firms are economic consulting firms, so that the work that I did was very similar at all three places: analyzing economic issues arising in litigation, including damages assessment and the valuation of intellectual property.
Q. Have you published any work, Ms. Mulhern, that relates to your educational and professional experience?
10:06 A. Yes, I have.
Q. What are some examples of your publications?
A. So I've published a number of articles on analytical tools used to value intellectual property.
Q. Have you given any presentations that relate to your education and your professional experience?
A. Yes. I'm a frequent speaker on these issues.
Q. Can you explain the relationship between your education and your professional experience and the work that you've done in this litigation.
10:06 A. For the past 25 years, I've been analyzing damages and valuing intellectual property, and that's exactly what I've been asked to do here in responding to the calculations set forth by Mr. Michael Wagner.
Q. Now, Ms. Mulhern, in this lawsuit, is your employer, the Analysis Group, being compensated for your work?

A. Yes, they are.
Q. And how much is the Analysis Group charging?
A. $600 per hour for my time.
Q. Is that compensation in any way dependent upon either the outcome of this case or your findings?
A. No, it's not.
Q. Have you served as an expert witness before in litigations?
A. Yes, I have.
10:07 Q. About how many times?
A. I've testified in court or at regulatory proceedings. I guess I've testified in deposition more than 50 times and in court at trial just more than 20 times, I think, at this point.
Q. And, generally speaking, what have you done when you've been an expert witness in previous litigations?
A. Generally speaking, my work involves the application of economic principles to issues that have arisen in the litigation context. Often that involves the analysis of damages or the valuation of intellectual property.
10:07 Q. Ms. Mulhern, before this lawsuit started, had you ever been retained by or done any work for either of the parties in this case, Neovasc or CardiAQ?
A. No.
Q. I want to ask you a few other questions about your background. Are you claiming to be an expert in technology or

device design?
A. No, I'm not.
Q. Are you claiming to be an expert in heart valves or medical issues?
A. No, I'm not.
Q. Are you claiming to be someone who went through the claimed trade secrets and analyzed them in a technical or engineering sense?
A. No. I'm not an engineer.
10:08 MR. GRAVES: Your Honor, at this time and under Rule 703, Neovasc tenders Carla Mulhern as an expert in the field of economic and financial analysis and monetary relief assessment.
THE COURT: Any objection?
MR. HORNE: No objection.
THE COURT: Go ahead.
Q. Ms. Mulhern, to help us get situated as we get started -- and, Bill, if we can turn to the next slide -- are you giving an opinion here that Neovasc in fact has done something wrong?
10:08 A. No, I'm not. As a damages expert, I have to assume a liability finding. I have no independent opinion on that issue.
Q. So if the finder of fact didn't find liability or legal wrongdoing in this case, what role would your opinions play?
A. So if there's no violation, then there's no claim for

damages, and both Mr. Wagner's opinion and mine would be irrelevant.

Q. Let's move on to the reason that you're here today, Ms. Mulhern. What was your assignment in your analysis for this litigation?

A. I was asked to respond to the damages calculations set forth by Mr. Wagner.

Q. And as part of that assignment, did you analyze the reliability of Mr. Wagner's calculations, including the inputs that went into those calculations?

A. Yes, I did.

Q. Did you develop your own conclusions?

A. Yes, I did.

Q. And what information did you rely on to develop your opinions in this case?

A. I relied on a variety of information, which is the type of information I typically use in these kind of assignments. That includes publicly available information regarding the companies in suit, CardiAQ and Neovasc, as well as the TMVI marketplace generally. I looked at information produced in discovery by the parties in the case. That's financial information and product information. I reviewed deposition transcripts of fact witnesses in the case. Those are sort of the company people that we've heard from here in this trial. I looked at Mr. Wagner's expert report, of course, and his deposition

transcript. And I also spoke with Neovasc personnel, including Alexei Marko, Randy Lane, and Chris Clark.
Q. Did you rely on any other experts who have given testimony during this trial?
A. I did. For some of my opinions, I'm relying on Neovasc's technical expert, Mr. Leinsing.
Q. Now, in the course of preparing your analysis for this lawsuit, did you create summary charts and analyses?
A. Yes, I did. A number of them were attached to my report.
10:10 Q. And if we look at the screen now, are we looking at the front page of some of the analyses and charts that you put together and the work that you did?
A. Yes. This is a compilation.
Q. So, Ms. Mulhern, do you agree with Mr. Wagner's conclusions, his opinions that he gave during this trial?
A. No, I do not.
Q. Were you here in the courtroom when Mr. Wagner gave his testimony last week?
A. Yes, I was.
10:11 Q. Do you agree with the statements that he made when he was here last week?
A. No, I do not.
Q. Can you tell us generally, why do you disagree with Mr. Wagner's opinions?
A. So based on my review of the evidence, Mr. Wagner's

damages methodology is fundamentally flawed, meaning that his $90 million royalty estimate is unreliable, excessive, and not an appropriate measure of damages in this case.

Q. You also say up here, you've got something about "even if one assumes that Mr. Wagner's framework were appropriate." What does that mean?

A. So even if we were to set aside those differences of opinion for a moment, if I were to use Mr. Wagner's framework, it's also my opinion that some of his assumptions are inappropriate and that he had made some errors in his analysis, which lead to an overstatement of that $90 million; and correcting for those errors results in a royalty figure of no more than $2 million.

Q. So a big picture, and, again, if we assume, as we must here, that there is liability in order for you to have your opinions, what is your opinion about damages here?

A. So in general, my opinion is that even if there's a -- given the substantial errors in Mr. Wagner's damages approach and the public disclosure of the claimed trade secrets here early in the period, at least as early as 2010 and 2011, it's my opinion that from an economic perspective, CardiAQ has not shown financial injury, and nor do I see a financial benefit to Neovasc associated with the use of the claimed trade secrets. From a damages perspective, this means that even if there is a liability finding in this case, that the appropriate award for

damages would be zero.
Q. Now, Ms. Mulhern, if the jury were to disagree with you and find that damages should be awarded in this case, have you worked through Mr. Wagner's framework, assuming it to be the right one, and provided an alternative calculation?
A. Yes, I have. As I said, even assuming that Mr. Wagner's framework were appropriate, if I just correct for some of the errors in that framework, it results in a revised royalty figure of no more than $2 million rather than the $90 million.
10:13 Q. Can you tell us about your first disagreement with Mr. Wagner at a high level. Why do you say that Mr. Wagner's opinions are unreliable and excessive?
A. There are several reasons for that. I'll go through them briefly here and get into them in more detail. The first is that there's no evidence of financial injury to CardiAQ. The second is that, in my view, Mr. Wagner's royalty number is excessive in light of a number of economic benchmarks. Third, he used the wrong starting point for his analysis. Fourth, his eight-month head start assumption used for his *Georgia-Pacific* 10:14 analysis is unreliable.
MR. HORNE: Your Honor, we renew our 702 objection.
THE COURT: Preserved.
A. And, finally, in my view, his one-size-fits-all royalty is inappropriate.
Q. So let's go through these, Ms. Mulhern, as you mentioned,

in more detail. You mentioned that there was no financial injury. When you're considering damages calculations in a case like this one, and when you're assuming for that analysis that there's liability, does it matter for a case like this one that the two parties don't have sales of their products?

A. I think this is an important fact from an economic perspective in this case, the fact that neither party has received regulatory approval to sell these devices in any country, so no one is making -- so neither CardiAQ nor Neovasc are making sales or profits on these devices.

Q. You mention here on the slide, you say "voluntary publication by CardiAQ." Just generally speaking, from an economic perspective, if there were a disclosure publicly of a claimed trade secret, would that have an effect on a damages analysis in a case like this one?

A. Yes, it would. Because there are no sales or profits on these products, CardiAQ can't claim damages in the form of lost profits, nor can they claim that Neovasc has unfairly profited associated with sale of these products. So this means that Mr. Wagner's approach is to use a royalty theory of damages. A royalty theory of damages asks us to place a value on the claimed trade secrets; that is, what are they worth? The voluntary publication of the trade secrets, at least as early as 2010 and 2011, affects that calculus in general. A trade secret that's kept secret forever is going to be worth a lot

more than a trade secret that is kept secret only for a short period of time.

MR. HORNE: Your Honor, I'll just object, Rule 26 and 702, to that last answer.

THE COURT: That's sustained.

Q. Are you relying, Ms. Mulhern, on another expert in your opinions about analyzing the effect on damages if one or more claimed trade secrets entered into the public domain?

A. Yes.

10:16 Q. And who are you relying on?

A. Mr. Leinsing.

Q. Did you hear any testimony in trial from witnesses from CardiAQ regarding disclosures of information in the years 2010 and 2011?

MR. HORNE: Objection, your Honor. The same objections, 26 and 702.

Q. And based -- I'm sorry.

THE COURT: Overruled.

Q. And based on your reliance as you've just described it

10:16 from a purely economic perspective, why would the publication of one or more items claimed to be a trade secret, why would that be something that would have an effect on a damages analysis in a case like this one?

A. Well, again, as I said, we're talking here about the value of the claimed trade secrets. That's the intellectual property

that's at issue here. In general, intellectual property or trade secrets that are kept secret forever are going to be worth a lot more than trade secrets that are disclosed to the public after only a short period of time. No one would pay a lot of money for a trade secret that's freely available to the public.

Q. Ms. Mulhern, we have had trouble all week, both parties have, with the microphones and the audio. Can I ask you to move up a little bit.

10:17 A. Yes. How's that? Is that better?

Q. Yes, that's better. Now, you mentioned that Mr. Wagner calculated a royalty. What is a royalty exactly from the perspective of a damages analysis?

A. So a royalty is a license fee, and a royalty is intended to reflect the value to Neovasc of the use of the claimed trade secrets.

Q. And you say here "Hypothetical negotiation at the time of alleged misappropriation." What's a hypothetical negotiation?

A. So it's a fancy way of saying, the courts have set out a

10:17 construct for us to use in analyzing royalty. It's called a "hypothetical negotiation construct" where we imagine that the two parties, here CardiAQ on the one hand and Neovasc on the other, would have sat down at a negotiating table and bargained over a license to the intellectual property -- here the claimed trade secrets -- in exchange for a license fee. That's the

royalty.
Q. Now, you also say here "At time of alleged misappropriation, March, 2010." Why would this hypothetical negotiation be timed at March of 2010 rather than today in May of 2016?
A. Well, the courts require us to set that hypothetical negotiation at the time of first -- at the first violation, so first misappropriation, and here we know that is March, 2010. That is the last time at which Neovasc had access to the
10:18 CardiAQ claimed trade secrets. So the court requires us to imagine that this negotiation had happened back in March, 2010.
Q. Now, is that the same date of the hypothetical negotiation that the CardiAQ expert, Mr. Wagner, used?
A. Yes, it is.
Q. Are there other important parts of a royalty analysis in a case like this one?
A. Yes. A royalty framework also requires us to assume that both parties are willing to enter into a license. This means that CardiAQ is willing to license its intellectual property
10:19 and Neovasc would be willing to make a license fee. This means that the license fee we arrive at or the royalty must be acceptable to both parties.
Q. Why in this analysis does the willingness of the parties in the hypothetical negotiation matter?
A. This means that that royalty amount that we arrive at has

to be acceptable to both parties at the time of the hypothetical negotiation, here March 2010.

Q. Now, in the framework for a hypothetical negotiation, after making the royalty payment to the plaintiff in this negotiation framework, is the defendant to be left with a profit or with a loss?

A. Typically a defendant is left with a profit after royalties, so that they enjoy some of the benefit of the license.

10:20 Q. Now, in this case, what exactly is the royalty trying to calculate?

A. So in this particular case, the royalty then is going to try to capture the value to Neovasc of access to and use of the claimed trade secrets in that period prior to the public disclosure in 2010 and 2011.

Q. And when you say "value to Neovasc," in economic terms, what are you getting at there?

A. There are two potential forms of economic benefit to Neovasc in this case, and those can be thought of broadly as

10:20 avoided costs: Did Neovasc save money as a result of its ability to use the claimed trade secrets, or did it save time associated with its use of the claimed trade secrets.

Q. Now, when you talk about avoided cost or avoided time, and from an economic perspective, does it make any difference in that analysis if it were found that information claimed to be a

secret had subsequently become publicly available?
A. Yes. I think that's an important point because then what we're looking at here is the narrower question of, how much money did Neovasc save or how much time did it save relative to just waiting until that information became freely available to the public?
Q. So now I want to, with this background, walk through the points that you mentioned, that, in your opinion, the royalty from Mr. Wagner is excessive, that the starting point for his
10:21 analysis was wrong, that the 18-month assumption is unreliable from an economic perspective, and that there's a problem with a one-size-fits-all royalty. Let's start, Ms. Mulhern, with your opinion that Mr. Wagner's royalty is excessive. When you say that his $90 million number is excessive, excessive relative to what?
A. In my view, that $90 million is excessive relative to a number of economic benchmarks.
Q. And specifically what are they?
A. So if we look in the second bar there, I've compared
10:22 Mr. Wagner's $90 million royalty number to CardiAQ's total spending on research and development from the period August, 2008, when they began to develop their TMVI device, to April, 2010, which is the last date at which Neovasc had access to CardiAQ confidential information.
Q. Is that the second bar here, this first blue bar on your

screen here, 0.5 or $500,000?
A. Right. This is the $500,000 number that appears in the second bar.
Q. Now, what about that caused you to conclude that Mr. Wagner's $90 million number is excessive?
A. Well, in analyzing the value of a license to Neovasc to the claimed trade secrets, as I mentioned, one relevant consideration is, did Neovasc save money by using CardiAQ's claimed trade secrets, as opposed to developing that technology on its own, spending its own money to develop the technology? To inform the amount of potential cost savings then to Neovasc, I looked at how much CardiAQ spent to develop the technology in this relevant period, and they spent $500,000.
Q. Now, just for clarity, is the $500,000 that CardiAQ spent during that period on R&D, is that money that was specifically attributed by CardiAQ in their financials to the claimed trade secrets in this case and not to other things?
A. No, it wasn't. Unfortunately, CardiAQ did not produce its financial information in such granular detail. There wasn't enough information from CardiAQ records for me to assess how much time they spent just on the claimed trade secrets. This is a total figure for all of their spending starting back in August, 2008, which is when they first began development on the device.
Q. Now, in this opinion that you're giving where you look

from the point of view of the hypothetical negotiation, you look at the price that's being asked or the payment price that's being asked, and then you look at how much the offering party or the licensor spent to develop what's being offered for license. Is there a name in economics for that type of analysis?

A. This kind of approach is generally referred to as a "cost approach."

Q. Okay. And what is a cost approach, Ms. Mulhern?

10:24 A. A cost approach is a well-accepted valuation methodology which essentially values intellectual property based on the costs associated with developing it.

Q. Now, were you here in court last week when Mr. Wagner testified that this cost approach is, quote, "usually does not give you a very good indication of value"?

A. Yes, I was.

Q. And in your own career, have you ever criticized a cost approach in particular contexts?

A. I have. Depending on the particular facts and

10:24 circumstances of a case, a cost approach can either overvalue or undervalue a technology.

Q. So in this case and in this particular context, do you agree with Mr. Wagner that the cost approach isn't a good way to go about this?

A. No, I don't. In this case, I think the cost approach

provides useful guidance as a reasonableness check on Mr. Wagner's overall methodology, which is how I've used it. Mr. Wagner's methodology relies solely upon an income-based approach, which is problematic here because that relies on an assessment of profits, revenues and profits associated with the sale of a product, and we have no revenues and profits yet in this case. So in my view, his reliance solely on the income approach is problematic here.

Q. So just to play out this cost approach a little bit further, if you're using a cost approach and CardiAQ is spending money to develop the thing that's going to be licensed, is that like they're making an investment?

A. Yes, it is.

Q. And when you think about this cost approach typically from an economic perspective, do you consider not just the costs that they would spend but a reasonable rate of return for the licensor on the things that are being licensed?

A. Yes, you would. So in thinking about the cost approach, one would think not only about the $500,000 spent but also allowing CardiAQ a reasonable return on that investment.

Q. Did you do that calculation yourself, Ms. Mulhern?

A. I didn't do the formal calculation here because I don't have access to the particular financial records associated with the costs, the costs associated with just the claimed trade secrets. Here I'm just using this as a reasonableness check.

In my view, even allowing for a reasonable rate of return, there's a lot of difference between the $90 million and the $500,000.

Q. Now, you've mentioned here that CardiAQ spent half a million dollars during a particular time period on R&D. When you did your analysis, did you also take note of how much CardiAQ spent -- how much they've spent in total to develop their device?

A. Yes. In total, for the last date which I had data, when I put my report together, so that's through 2014, CardiAQ had spent $11.5 million in developing the TMVI device.

Q. And did your analysis in this case also mention how much Neovasc has spent to develop its Tiara device?

A. Yes. Over this same period or through this same period, Neovasc had spent $14.9 million.

Q. Now, of those two companies, which spent more to develop their device?

A. Neovasc.

Q. Now, you also here are comparing the $90 million number in red to something else. What else are you comparing it to?

A. So this last bar here, the $12.8 million, I'm comparing the $90 million to the overall company value, the value of Neovasc as a company just prior to the hypothetical negotiation in 2010.

Q. Now, Mr. Wagner testified that in early 2010, February,

2010, this market value for Neovasc of $12.8 million really isn't the right number because nobody knew then that Neovasc was contemplating or starting an idea for a mitral device. Do you agree with his point?

A. I do agree that as of that time, Neovasc had not told the market it was developing the Tiara, so the value of Tiara cannot be reflected in the $12.8 million. But I also note that at that time the Tiara project was in its infancy, and it's unlikely as a result that the market would have placed substantial value on the project at that time.

Q. Let's discuss your next opinion, that Mr. Wagner's starting point is flawed or erroneous. Can you explain for us what that means.

A. Sure. As a starting point for Mr. Wagner's royalty analysis, he uses a 2015 valuation for Tiara. So this implicitly assumes that Neovasc's access to and purported use of the claimed trade secrets affected the overall development timeline and then the valuation of Tiara several years later in 2015. Given the public disclosure of the claimed trade secrets early in this period, in 2010 and 2011, this assumption fails to account for the possibility that Neovasc could have just waited to use the claimed trade secrets until they became in the public domain without affecting its overall development timeline. So this is a critical error on the part of Mr. Wagner.

Q. Now, before we get further, and understanding that you yourself are not a technical expert, can you remind us again if you relied on other expert testimony in considering potential public disclosures of information that's claimed as a trade secret in the years 2010 and 2011?

A. Yes, I did. As I said, I relied on Mr. Leinsing for his technical opinions in this regard. As I understand Mr. Leinsing's testimony yesterday, it's Neovasc's view that all of the claimed trade secrets were in the public domain prior to the hypothetical negotiation; but as a damages expert, I have to assume liability, so I'm going to set that aside. But even setting that aside, the evidence shows, according to Mr. Leinsing, the claimed trade secrets were in the public domain at least as early as April, 2010, and December, 2011.

Q. And, again, did you hear any testimony from people from CardiAQ along the same lines regarding disclosures in April, 2010, and December, 2011?

A. Yes. I reviewed the trial transcripts of Dr. Quadri and Mr. Ratz which were consistent with this.

10:30 MR. HORNE: Objection, 702.

THE COURT: Overruled.

Q. Now, based on your reliance on Mr. Leinsing regarding the trade secret issues on which you yourself are not a technology expert, from an economic perspective, and when you assess whether access to that information affected Neovasc overall

development timeline, did you also consider Mr. Ratz's point in his testimony that Neovasc got access to the claimed trade secrets before April, 2010, as early as June or July of 2009, about ten months earlier?

A. Yes, I did.

Q. And from an economic perspective, wouldn't earlier access to this information be expected to accelerate Neovasc's overall development timeline, even based on your reliance on Mr. Leinsing, if the information became public later?

10:31 A. Not necessarily. It depends critically on how much work Neovasc was doing in that time frame.

Q. And based on your analysis in this case, are you aware of -- exactly how much work had Neovasc been doing on the Tiara project as of April, 2010?

A. Very little. So as of April, 2010, as Mr. Marko testified, the Tiara wasn't even an official project at Neovasc, and I think just one person, Randy Lane, had been authorized to spend some time on his lunch hour or evenings and weekends to investigate the feasibility of the concept. In

10:32 fact, based on my research, Mr. Lane had spent only about 44.5 hours on the project in the time from October, 2009, when they began to April, 2010, so about a week's worth of work until this first disclosure.

Q. From an economic perspective, what does that tell you about the impact if Neovasc just waited until April, 2010, to

begin development on Tiara?

MR. SGANGA: Objection, your Honor, 702, and this might be worth a sidebar.

THE COURT: Okay, that's fine.

SIDEBAR CONFERENCE:

MR. HORNE: So I'm just concerned that we're getting close, and I'm anticipating a comment that from an economic perspective, this is really a proxy for common sense, and it's really not an expert opinion. She's going to say, from an economic perspective, it would make sense that he didn't spend a lot of time, sort of ended up relying on the timeline. And my concern and my objection is, economic perspective just means common sense as a layperson, that there's no economic perspective on how long it takes Neovasc to develop a product.

MR. GRAVES: As set forth in her report issued back November-December and her deposition, she's analyzing the overall calculation for a royalty, which really depends on the timing of certain events, and pointing out that the calculation would differ if you considered the actual development timeline facts from an economic perspective. So she's bringing to bear financial tools to each input into Mr. Wagner's calculations. Again, this is the subject of her report. It's a big part of it. We're well past the deadline in the case for this sort of thing, and all of this was fully at issue in her report.

THE COURT: I hear the objection.

MR. HORNE: My response to that is, when she's talking about the timeline, it has to be from the perspective of a technical person. For a layperson, I don't see how an economic perspective adds anything.

THE COURT: Well, I view the time value of money to be an economic concept.

MR. HORNE: That's not what she's saying about the timeline.

THE COURT: No, it's not, but I'm just saying, there are things that are not technical, so we'll see where she goes with that.

09:37

MR. HORNE: Thank you, your Honor.

(End of sidebar conference.)

BY MR. GRAVES:

Q. Ms. Mulhern, let me ask that question again. From an economic perspective, what does all of this tell you about the impact on Neovasc if they were to wait until April, 2010, to begin the development of their Tiara project?

A. Given that as of April, 2010, Neovasc had only spent about a week in development of the Tiara, Mr. Wagner's failure to consider the possibility that Neovasc could have made up that week of time over the ensuing several years is a critical omission in his analysis.

10:35

Q. And how does that relate to his use of the 2015 valuation of Tiara in your critique of that?

A. So if Neovasc had been able to make up that development time, then there would be no impact on the 2015 valuation, meaning Mr. Wagner's starting point is fundamentally flawed.

Q. Did you investigate in your analysis in this case how much work Neovasc had done on the Tiara project prior to the second date that we've heard about from Mr. Leinsing, the December, 2011 patent publication date?

A. Yes, I did. To analyze this, I looked at time records that Neovasc produced for its R&D personnel.

10:36 Q. And based on your analysis, approximately when did the Tiara project at Neovasc become a fully fledged formal project?

A. I think, as Mr. Marko testified, that project, it became a fully official project within Neovasc as of June, 2011.

Q. And so when you looked at the Neovasc time entry records for your analysis, what did you learn?

A. Looking at the time entry records for Neovasc over the period April, 2010, to December, 2011, showed me that the project wasn't a high -- Neovasc personnel spent relatively limited time on R&D on that project during that period. About

10:37 16 percent of their time was spent on the Tiara relative to other projects, so it looks as though Neovasc was pursuing other priorities at that time.

Q. Now, to summarize, over the years or the period from April, 2010, to 2011, and looking again at your analysis of the time records, how much total time did Neovasc spend in

developing the Tiara project?
A. So this slide shows my calculations here. If I look at the total time from the prior slide and recognize that Neovasc had about eleven employees working on the project, this means that it translates to about 2.8 months of full-time work.
Q. Did you analyze anything else in terms of financial records in determining how far along Neovasc was in developing the Tiara project, again, as of that date, December, 2011, that Mr. Leinsing spoke about with respect to that patent publication?
10:38 A. Yes. I also looked at the intensity of Neovasc's development efforts in this period from a financial perspective.
Q. And what did you learn when you did that?
A. I have a slide here, yeah. As I mentioned, Neovasc's total R&D spending on the Tiara was $14.9 million. In this early period, though, up through 2011, they'd only spent about $1 million. So less than 7 percent of the R&D spending was spent in this early period, which is consistent with the time records in telling the story that this wasn't -- they weren't
10:38 investing a lot of effort in the project at this point in time.
Q. So from an economic perspective, and in relation to your critique of Mr. Wagner's use of the 2015 valuation as his starting point, what did you conclude from your analysis of the time records and the financial records?
A. So, again, given the public disclosure of the trade

secrets in 2010 and 2011, in conjunction with the relatively limited amount of effort Neovasc had put into the project at that point, it was unreasonable for Mr. Wagner to assume that the purported use of the claimed trade secrets affected the overall Tiara valuation several years later in 2015.

Q. Now, if the development timeline weren't affected by the wrongdoing that we're assuming for your analysis, what implications would that have for Mr. Wagner's royalty calculations?

10:39 A. Well, then the 2015 valuation wouldn't have been affected, and he's used the wrong starting point.

Q. Are there other problems, in your view, Ms. Mulhern, with Mr. Wagner's use of the 2015 valuation of Tiara as a starting point in his own analysis?

A. Yes. As I mentioned earlier, the hypothetical negotiation here occurs in March, 2010. So Mr. Wagner's use of the 2015 valuation several years later, in my view, is inappropriate.

Q. Now, I want to move now to your point where you mentioned Mr. Wagner's assumption of a head start. To begin with, is

10:40 there a reason from an economic perspective why you would ask whether Mr. Wagner's assumption of an 18-month head start was reliable?

A. Yes. As I understand it, the assumption of an 18-month head start is an important input into Mr. Wagner's analysis. So in analyzing the reliability of his overall damages

calculation, it's important to analyze the reliability of the inputs.

Q. Now, to get started and when you're thinking about damages calculations, what exactly do we mean by the phrase "head start"?

A. So I think "head start" here just refers to the possibility that Neovasc could have cheated by skipping steps as a result of having access to the CardiAQ claimed trade secrets.

10:41 Q. And in the framework of Mr. Wagner's calculations in getting to his $90 million number, what role did that assumption of an 18-month head start play?

A. So as Mr. Wagner testified, his 18-month head start assumption was -- I think he referred to it as a fulcrum point for his *Georgia-Pacific* analysis.

Q. And, generally speaking, what was the basis of where that 18-month head start number came from that he inputted into his calculations?

A. Mr. Wagner testified that he relied on Mr. Ratz for that

10:41 assumption.

MR. HORNE: Your Honor, we renew our 403 objections.

THE COURT: Preserved.

Q. In your analysis and your review of Mr. Wagner's opinions, did Mr. Wagner cite to any other evidence in support of that point?

A. No, he didn't.

MR. HORNE: Also Rule 702. I apologize.

THE COURT: Preserved.

Q. In your reliance on Mr. Leinsing and your review of Mr. Leinsing's testimony, did he provide any evidence for a wrongful head start?

A. He did. As I understand Mr. Leinsing's testimony, he opined that there was no head start as a result of the purported use of the claimed trade secrets.

10:42 Q. In your analysis, in your own work here, and from an economic perspective, did you consider any information about the time that it did or didn't take Neovasc to develop its Tiara device?

A. So in analyzing the reliability of this assumption, I also examined evidence that was available to me regarding the development timelines for the two parties, CardiAQ and Neovasc.

Q. And if we look over to the next slide, Bill. What are we looking at here, Ms. Mulhern? What is the information on this slide?

10:43 A. So this is a somewhat complicated exhibit. For that, I apologize. It shows the two development timelines for the two parties up until the date of the first in-human implantation, the first successful in-human implantation. CardiAQ's timeline is on the top and Neovasc is on the bottom. These are timelines that were provided by Mr. Wagner in his expert

report, although it was slightly different. He used the actual dates, which reflect the fact that CardiAQ started work earlier than Neovasc on these devices. Here what I've done is to, in order to put the timelines side by side and compare them, I've normalized them so each begins with month one.

Q. And what milestones did you compare when you looked at these charts or these pieces of information from Mr. Wagner's own analysis?

A. In comparing these charts, I looked at a few milestones: the initial in vivo animal testing, regulatory testing, and first successful in-human implantation.

Q. And, Ms. Mulhern, why did you look at those milestones in particular?

A. Mr. Wagner characterized those as major milestones in his expert report.

Q. So if we turn over to the next slide, Bill. What did you find, Ms. Mulhern, when you looked at this information that came from Mr. Wagner?

A. For some of these milestones, Neovasc actually took longer to get there.

Q. How so?

A. If I look at the animal studies milestone, it looks as though Neovasc took one month longer to get there, and for first in human, it looks as though Neovasc took five months longer to get there.

Q. Is this type of comparison economically relevant when you're considering damages calculations?
A. Yes, I think it is.
MR. HORNE: The same objection as at sidebar.
A. Sorry. Yes, I think it is. While it's not dispositive --
Q. Sorry, Ms. Mulhern.
A. Oh, I'm sorry, I'm sorry.
THE COURT: Overruled.
Q. Let me just ask it again so we have a clean question.
10:44 Sorry about that. From an economic perspective, does this sort of comparison, is it meaningful when you're thinking about damages calculations in a case like this one?
A. Yes, it is. While it's not dispositive, it certainly is inconsistent with an opinion of an 18-month head start.
Q. Now, with respect to the source or the origin of Mr. Wagner's assumption that there was an 18-month head start, do you have an understanding of what that number represents?
A. Yes, I do.
Q. And what is your understanding?
10:45 A. It's my understanding that that number represents the amount of time that CardiAQ spent in developing its TMVI device from when it started in 2008 to the termination of the Neovasc relationship in 2010.
Q. And, in your opinion, is the time that CardiAQ spent during that period a reliable proxy for assuming a wrongful

head start by Neovasc?
A. No, absolutely not.
Q. Are there factors that an economist, in your opinion, should consider when assessing whether the time that it takes one company to get from Point A to Point B would be equivalent or roughly equivalent to the time it would take another company to get from Point A to Point B?
A. Yes.
Q. Can you explain your opinion on that issue, Ms. Mulhern.
10:46 A. Yes. I think, first, it's important to remember that the time spent by one party is not going to be the same. One just can't assume that that's equivalent to the time saved by another party. It can depend on -- before one makes that assumption, one needs to investigate specific facts and circumstances.
Q. And what are some of the facts and circumstances that in your view an economist ought to consider when thinking about those types of assumptions?
A. The one --
10:46 MR. HORNE: Objection. 702, your Honor. I apologize for interrupting.
THE COURT: On your last objection?
MR. HORNE: Yes.
THE COURT: Or is this a new objection?
MR. HORNE: 702 to this question. Sorry.

THE COURT: 702 to this question. Overruled.
Q. Let me just ask it again, Ms. Mulhern. What are some of the facts and circumstances that in your opinion an economist ought to consider when thinking about assumptions of head start?
A. So before assuming that the time spent by one party is going to be exactly the same as the time spent by another party, one should look at specific facts, such as how much effort were the parties putting in, how many resources, did the
10:47 parties have different levels of resources devoted to the project that would enable maybe one party to move faster?
Q. Now, you've mentioned or you've described your reliance on Mr. Leinsing with respect to his testimony about publication dates of some patent documents from CardiAQ. For that sort of thing, if there's a disclosure of information that's claimed to be a trade secret sort of after the fact, does that have any implications when you're thinking about an assumption of a head start?
A. Yes, it does.
10:48 Q. How so?
A. So I think here, the fact of the public disclosure of the trade secrets in 2010 and 2011 has important implications for the head start because, as we heard earlier, as I mentioned earlier, as of 2011, Neovasc had only spent about three months' worth of time in developing the Tiara device. So one needs to

consider the possibility that Neovasc could have made up that time between then and 2015, or prior to market approval, which would suggest then no head start or no impact on overall time to market.

Q. In your review of Mr. Wagner's work, did he consider any of these types of factors that you've mentioned relative to his assumption of an 18-month head start?

A. No, he didn't. Based on my review of Mr. Wagner's work, he didn't consider whether there were differences in the amount 10:48 of resources that the parties had to spend on the project, as in different numbers of people working on the development of the CardiAQ device versus Neovasc device. He didn't consider the relative skills and experience of the parties, maybe whether one party had more expertise in an area than another. He didn't consider whether one party may have made some mistakes in development, as in going down some dead ends or dry holes. And he didn't consider whether maybe one party would have been constrained due to lack of funding for some periods requiring interruptions in the development process. As well, 10:49 he didn't consider, as we just discussed, the public disclosure of information that could be relevant to the development process.

Q. Now, in your opinion, Ms. Mulhern, what impact, in your view, does Mr. Wagner's failure to consider those types of factors have on his 18-month assumed head start?

A. This suggests to me that the 18-month head start assumption is unreliable.

MR. HORNE: 702 again, your Honor.

THE COURT: Overruled.

Q. If Mr. Wagner had not assumed a head start rather than assuming an 18-month head start, what effect would that have on his calculation, his damages calculation in this case?

A. As Mr. Wagner testified, if there's no 18-month head start, there's no $90 million royalty.

10:50 Q. I want to move on now, Ms. Mulhern, to the next opinion that you described earlier. You said something about a one-size-fits-all royalty. What do you mean by that?

A. So Mr. Wagner's royalty opinion here is that the $90 million figure applies to each of the claimed trade secrets alone, as well as all of them together, or any subset of the trade secrets. This suggests from an economic perspective that his methodology is not tied very closely to the intrinsic value of the intellectual property at issue.

Q. Well, understanding that you're not a technical expert,

10:50 can you give me an example of why the claimed trade secrets shouldn't have the same price tag from a financial perspective?

A. So, as I understand it, claimed Trade Secret 6 can be thought of as a cumulative total of the other trade secrets. I think Mr. Wagner referred to it as the "kitchen sink." Mr. Wagner's opinion is that that cumulative total of the

$90 million is worth the same as each individual part, which just makes no economic sense.

Q. In your review of Mr. Wagner's opinions, did he give an opinion on the value of any sub-elements or subparts standing alone out of those claimed trade secrets; by way of example, a mushroom tab standing alone or a CAD file standing alone?

A. No, he didn't.

Q. So we've discussed now your opinions that Mr. Wagner's $90 million number is excessive, that he used the wrong starting point with that 2015 valuation, that his assumption of an 18-month head start is unreliable, and that there's a problem, in your opinion, with using what you call a one-size-fits-all price tag for the various claims. As a result of all of these opinions, Ms. Mulhern, and again if we're assuming liability here, what damages do you believe are appropriate?

A. Zero damages.

Q. Why do you say zero damages?

A. Given the substantial errors in Mr. Wagner's methodology in conjunction with the early public disclosure of the claimed trade secrets, it's my view that there's no evidence of financial injury to CardiAQ or financial benefit to Neovasc associated with the alleged use of the claimed trade secrets. This means that even in the event of a liability finding, the appropriate damages number is zero.

Q. Let's imagine that someone disagrees with you and believes that Mr. Wagner nonetheless did use the right framework in putting together his calculations. In that scenario, do you believe that his $90 million number is the right result?
A. No. In my view, that number is still substantially overstated. So even using his methodology and correcting for some of those errors, that would result in a revised reasonable royalty number of no more than $2 million.
Q. To get us situated, how did Mr. Wagner mathematically or using calculations get to that $90 million number?
A. So I provided a schematic that sort of shows a graphical depiction of Mr. Wagner's methodology with his 2015 Tiara value starting point, then how he arrives at the baseline royalty that he talked about, the impact of his 18-month head start assumption in his *Georgia-Pacific* factor analysis, and then the remaining analysis of the *Georgia-Pacific* factors which resulted in his number of $90 million.
Q. Can you create an alternative royalty calculation using this framework, again, Mr. Wagner's framework?
A. Yes, I did.
Q. And you also mentioned a moment ago that even if we used Mr. Wagner's framework, you disagree with it. Why is that?
A. I have three primary concerns. I think there are three main types of errors. The first is, he overstated the baseline royalty. The second is, he used an exaggerated and unreliable

estimate of the head start, and, third, he made errors in his analysis of the *Georgia-Pacific* factors.

Q. And big picture, what would be the impact, in your opinion, of correcting those points of disagreement, again using Mr. Wagner's framework?

A. So using this framework, I prepared an alternative schematic where I've just replaced the numbers that reflect my corrections, and that would result in a royalty of $2 million.

Q. Let's start with the first issue that you mentioned. Do you disagree with the way that Mr. Wagner calculated his $125 million baseline royalty?

A. Yes, I do.

Q. Why?

A. In calculating that number, Mr. Wagner starts with that 2015 valuation of Tiara. That's the starting point we talked about earlier. As I mentioned, I think that's fundamentally flawed. But even setting aside that area of disagreement, even assuming the 2015 valuation could be the appropriate place to start, Mr. Wagner should have made a couple of adjustments to that number to take into account the fact that the hypothetical negotiation is five years earlier in 2010.

Q. And what are those two points of adjustment, in your view?

A. The first is, he fails to express that 2015 valuation in 2010 dollars; and the second is, he fails to account for greater uncertainty about the risks associated with the Tiara

project in 2010 than in 2015.
Q. Can you explain for us the first of those points, the idea that a 2015 valuation should be expressed in 2010 dollars. What does that mean?
A. Sure. As Mr. Wagner acknowledged, these devices aren't on the market yet, and we don't expect, even assuming regulatory approval, we don't expect any revenues or profits from these devices until several years into the future. So in doing his analysis, Mr. Wagner had to discount those future cash flows to 10:56 2015 to do his 2015 valuation. This discount factor was designed to, as he testified, account for the time value of money and the uncertainty associated with the cash flows in the future.
Q. If Mr. Wagner had discounted the 2015 Tiara valuation back to 2010 dollars, what would have been the impact on his baseline royalty?
A. So if Mr. Wagner had carried through that exercise of discounting the cash flows from 2015 all the way back to 2010, the time of the hypothetical negotiation, which is more 10:56 appropriate, in my view, it would have resulted in a substantially lower number.
Q. You also mentioned as your second point of disagreement that Mr. Wagner didn't account for what you described as uncertainty between 2010 and the year 2015, over that five-year period. What do you mean by that?

A. So this is a critical difference here, especially with respect to the facts of this particular case. In 2010, the Tiara project was in its infancy in terms of they were just getting started. As I mentioned, there were only about a week's worth of work on the project. So the project was just in its infancy. In 2015, the project had already completed a number of make-or-break type milestones, which failure at any one of those junctures could have killed the whole project. So in 2010, the project was subject to much greater risk and
10:57 uncertainty than in 2015.
Q. Is there a way to capture economically the impact of those uncertainties that would have existed, in your opinion, in 2010 compared to 2015?
A. Yes. We economists would do that through the discount factor.
Q. Now, what discount factor or discount rate did Mr. Wagner use in his own calculations?
A. He used a 25 percent discount factor.
Q. What rate do you think is appropriate?
10:58 A. I think a discount factor of 40 percent is more appropriate. As Mr. Wagner acknowledged, a higher level of risk is associated with a higher discount rate.
Q. Now, with all of these factors that you've just discussed accounted for, did you provide a corrected estimate, again, if we think about Mr. Wagner's framework and his valuation of

Tiara?
A. Yes, I did.
Q. Can you explain this for us, please.
A. Yes. This chart just shows my correction of Mr. Wagner's baseline royalty. Here I'm just correcting for the errors I just described. The top panel shows Mr. Wagner's calculation and how he arrived at the baseline royalty of $125 million, and in the bottom panel I've corrected that showing the impact of discounting the values back to 2010, and applying the higher
10:58 discount rate results in a 2010 value of Tiara of $13.3 million.
Q. In the middle of this slide it says something about an allocation to trade secrets and 50 percent. For that piece of your chart, did you use the same values that Mr. Wagner used?
A. Yes, I did.
Q. And so if we accept the same 50 percent allocation to the claimed trade secrets just as Mr. Wagner did, what does that ultimately lead us to in your baseline royalty calculation?
A. It results in a corrected baseline royalty of $6.7 million.
10:59 Q. Now, you also mentioned as your second of three points of disagreement with Mr. Wagner's calculations an unreliable head start. What were you referring to there?
A. That refers to our discussion earlier about the 18-month head start assumption.
Q. And, again, had you seen any estimates about a head start

from any other experts in this trial?
A. Yes. Mr. Leinsing testified that from a technical perspective, there was no head start, so that's zero months.
Q. Now, earlier, Ms. Mulhern, you mentioned that when you looked at the time entry records, the Neovasc employees had spent somewhere around three months' worth of time in developing the Tiara project up to that date of December, 2011. From an economic perspective, is using employee time entry data a way to think about structuring a potential alternative head
11:00 start?
A. I think it could. I think it could capture sort of a value, an upper bound on the head start or a maximum head start. As I mentioned, as of the first disclosure date, Neovasc had spent about one week worth of time on the Tiara project. As of the second, they'd spent about three months. I think in general, as I opined earlier, I think it's likely that Neovasc could have made up that time without affecting the overall development timeline. But even for the sake of argument, supposing that that time couldn't have been made up
11:00 in the intervening period, that suggests a shift in the development timeline of no more than three months.
Q. Now, and just to be clear here, when you're talking about this three months of employee time entry that you looked at, are you thinking about the December, 2011 date, the later of the two patent publications that Mr. Leinsing discussed, or are

you doing this with respect to the first one in April, 2010?
A. So this very conservatively uses the December, 2011 date. If we acknowledge that many of the claimed trade secrets were available as early as April, 2010, that would shrink that window or shorten that delay period.
Q. So, in other words, you're using the later date as the basis of your corrected calculations here; is that right?
A. Yes, in an attempt to just put an upper bound or arrive at an estimate of a maximum head start.
11:01 Q. Now, if there were a roughly three-month head start assumption in Mr. Wagner's calculations instead of an 18-month head start calculation as an input to his calculations, what would the result be?
A. Just flowing that through the numbers, using the revised valuation I just described, takes the value of the head start down from $134 million down to $2 million.
Q. In your bubble here next to "Corrected," the text says "Zero to three-month head start"? Why is there a zero there?
A. That zero-month head start corresponds to Mr. Leinsing's
11:02 technical opinion that there was no head start here. Obviously, flowing that through the numbers results in zero damages.
Q. Now, you also mentioned as your third and final point of disagreement of Mr. Wagner using his framework something about *Georgia-Pacific* factors. Can you remind us, what does

Georgia-Pacific refer to?
A. So *Georgia-Pacific* is a landmark court case that set out some case law that folks like us, me and Mr. Wagner, use in analyzing reasonable royalty. It sets out 15 factors that we're supposed to consider in arriving at reasonable royalty opinions.
Q. And in your own analysis, did you agree or disagree with the way Mr. Wagner weighed those 15 *Georgia-Pacific* factors?
A. I agreed in part and disagreed in part.
11:02 Q. And can you explain for us how that disagreement worked in general.
A. So, in general, Mr. Wagner opined that as a result of his analysis of the *Georgia-Pacific* factors, two of the factors pointed in the upward direction and one pointed in the downward direction. In my view, while I agree with him that two of the factors point in the upward direction suggesting a higher royalty, in my view, five of the factors point in the downward direction.
Q. Can you give us an example of one of the factors where you
11:03 believe, in your opinion, that there should be a downward impact on the royalty?
A. So Factor 7 is a good example here. Mr. Wagner opined that, in his view, that factor had a neutral impact on the royalty; but, in my view, the term of the claimed trade secrets suggests downward pressure.

Q. So let's make sure we've worked through this Factor No. 7. When you say "term of a trade secret," what does the phrase "term of a trade secret" mean?

A. So term asks us to think about the life of the intellectual property. In a patent case, this would be the life of the patent. Here it's a trade secrets case, so we're thinking about the life of the trade secrets: How long is that information going to be useful?

Q. And when does a trade secret die, if we're talking about a life span?

A. It dies when it's publicly disclosed.

Q. And based again on your description of your reliance on Mr. Leinsing's work, why exactly did you disagree with Mr. Wagner on Factor No. 7?

A. Well, as I understand it, based on Mr. Leinsing, the claimed trade secrets were disclosed in this case by December, 2011, which is a relatively short period after the hypothetical negotiation, so this would limit the amount of money that one would be willing to pay for a license to those trade secrets.

Q. Ms. Mulhern, I want to shift gears and ask you about a different piece of Mr. Wagner's testimony. In his list of, I guess, considerations for the parties, he stated that it's crucial to be first or second to market. Do you agree with Mr. Wagner that in this market, only the first or second entrant in the market would be expected to make significant

profits?
A. No, I don't.
Q. Why do you disagree with him?
A. Well, in general, I think there could be some advantage to being a first mover, being first to a market. My review of the investment analyst reports and the public information about the TMVI marketplace strongly suggests that the analysts expect the market opportunity here to be big enough to support several successful companies.
11:05 Q. Now, to sum all these factors up, what is your corrected royalty calculation? Again, for the situation where we assume that there's wrongdoing, we assume that Mr. Wagner's framework is the right one, what is your corrected calculation?
A. So in the top panel I show Mr. Wagner's key inputs to his analysis -- his baseline royalty, the value of the head start, and his *Georgia-Pacific* factor analysis, and how he arrived at his $90 million number -- and in the bottom panel I provide my corrected numbers. The baseline royalty becomes $6.7 million. The value of the head start ranges then from zero to
11:06 $2 million, and my analysis of the *Georgia-Pacific* factors, which suggest that several point in the downward direction. In sum, I conclude that royalty damages would be $2 million.
Q. So what is your bottom-line summary, Ms. Mulhern, for your royalty analysis compared to that provided in this case by Mr. Wagner?

A. So my bottom-line summary, as shown on this chart, is that Mr. Wagner's $90 million number is excessive, and that the appropriate damages here is no more than $2 million.
Q. On your chart here, there's a zero dollars and zero cents in the middle of the chart. What is that referring to?
A. That zero just refers to or reflects the amount of money that CardiAQ and Neovasc have made on these devices to date.
MR. GRAVES: Thank you, Ms. Mulhern. I have no further questions.
11:07 THE COURT: Yes, while they're switching places, feel free to move around over there.
MR. BOEHM: Your Honor, can I bring Ms. Mulhern another bottle of water?
THE WITNESS: Oh, actually, I've got one.
CROSS-EXAMINATION BY MR. HORNE:
Q. Good morning, Ms. Mulhern.
A. Good morning.
Q. I'm Brian Horne. I don't believe we've met yet.
A. Nice to meet you.
11:08 Q. Pleasure to meet you. I believe, as you mentioned, your area of expertise is economics? That's right?
A. That's right.
Q. You're not an expert in medical device technology?
A. No.
Q. Can we look at your Slide 2, please. I notice under your

professional experience you say "Expert in healthcare industry litigation"?
A. That's right.
Q. That means you are a damages or economic expert in cases involving healthcare, right?
A. That's what it means, yes.
Q. It doesn't mean that those cases qualify you as an expert in the medical field, right?
A. That's correct.
11:09 Q. And you're not an expert with respect to TMVI technology?
A. That's right.
Q. You haven't visited Neovasc's facility?
A. That's right.
Q. And when you formed your opinions in the case, you hadn't seen a physical specimen of any of the actual Tiara devices at issue in the case?
A. I'd seen many pictures, but I haven't seen an actual device.
Q. Okay. You hadn't seen any physical devices that CardiAQ
11:09 provided to Neovasc?
A. That's right.
Q. There was some discussions about public disclosures. You haven't gone through CardiAQ's patent applications to determine whether those applications disclose all of the details that CardiAQ provided to Neovasc, right?

A. No, I haven't.
Q. That was Mr. Leinsing you were relying on?
A. That's right.
Q. So we heard you had some disagreements with Mr. Wagner?
A. Yes.
Q. But it's fair to say that in the community of experts that value damages, Mr. Wagner is well respected, isn't he?
A. That's fair to say.
Q. And you're not challenging Mr. Wagner's opinions based on
11:10 the fact that he's chosen a lump-sum royalty, right?
A. That's right.
Q. And you're not saying as part of your opinions that the people and the folks at Neovasc are inherently more trustworthy than the people at CardiAQ, right?
A. No, I'm not.
Q. You're not making an assessment in this case that Mr. Leinsing is more trustworthy than CardiAQ's expert, Dr. Hillstead, right?
A. That's right.
11:10 Q. And you and Mr. Wagner, you each testified about a hypothetical negotiation?
A. That's right, we did.
Q. And you both agree that it's appropriate to use a hypothetical negotiation to determine the value of a reasonable royalty, right?

A. We do.
Q. And you agree that it's proper to look at events that occur after the date of the hypothetical negotiation to factor into a reasonable royalty, right?
A. Yes.
Q. Now, you and Mr. Wagner both assume liability?
A. Yes, we do.
Q. And you don't take any issue with Mr. Wagner assuming liability, right?
11:11 A. No. We're damages experts. We have to assume liability.
Q. Exactly. And you agree that if all of CardiAQ's trade secrets were publicly disclosed before the hypothetical negotiation, then there wouldn't be liability, right?
A. That's right.
Q. You also agreed that to suggest that CardiAQ lost no exclusivity would be inconsistent with concluding that there is liability in this case, right?
A. My review of the evidence indicates that given the public disclosures, any exclusivity lost by CardiAQ is very limited in
11:12 duration.
Q. Okay, let me ask the question again. To suggest that CardiAQ lost no exclusivity would be inconsistent with concluding there is liability; isn't that correct?
A. I think it may be correct to say they had some short-term loss of exclusivity, based on my review of the evidence,

assuming liability.
Q. So then to say they lost no exclusivity would be inconsistent with saying there's liability, right?
A. I think I can agree with that.
Q. Thank you. If I understood you correctly, your opinions are basically a critique of Mr. Wagner, right?
A. That's right.
Q. In other words, you didn't do an independent analysis of damages in this case, right?
11:12 A. My assignment was to analyze Mr. Wagner's damages opinions. I did a bunch of independent analysis as part of that work, but it wasn't my assignment to arrive at a damages figure.
Q. So, in other words, you did not do an independent analysis of damages in this case, right?
A. I think that's right.
Q. And you didn't do an affirmative analysis of what a reasonable royalty would be in this case either, right?
A. That's right.
11:13 Q. And you didn't do an independent analysis because based on your review of the evidence, you believed there was insufficient evidence in the record, right?
A. That's right.
Q. And I believe you testified on direct you didn't see any benefit to Neovasc of misappropriating CardiAQ's trade secrets?

A. That's right.
Q. Can we have Exhibit 384, please. This is Neovasc's 2013 Annual Information Form, right?
A. Yes.
Q. And this is one of the documents that you considered?
A. Yes, it is.
Q. Can we turn to Page 15 of Exhibit 384. This is in your cross binder. You can look on the screen, whatever is easier for you.
11:13 A. Okay.
Q. And it's actually Page 15 of the exhibit, Page 12 labeled of the document. That trips people up sometimes.
A. Okay.
Q. Let me know when you're there.
A. I just found the document. You said Page 12?
Q. Yes, Page 15 of the exhibit, Page 12 of the document, so the page at the bottom is 15, the top is 12.
A. Okay. Okay, I'm here.
Q. Okay. In this document, Neovasc says that "The Tiara
11:14 program has benefited enormously from this pool of experience and talent that has evolved as we have worked with our partners," right?
A. I see that language.
Q. Okay. The same paragraph, it says, "Neovasc has been able to move the product development forward rapidly with minimal

cost from the flexibility it has to draw on its staff and then return them to revenue-generating activities when they are not working on the Tiara project," right?

A. I see that.

Q. You considered that?

A. Yes.

Q. Could we go to Exhibit 608, please, Page 4. This is a presentation that Neovasc made to its board of directors, right?

11:15 A. Yes.

Q. And you reviewed this document in your preparation?

A. Yes.

Q. And in this document, Neovasc told members of its board of directors that it had a competitive advantage from a, quote, "intimate understanding of what has and has not worked so far in the development of percutaneous valves," right?

A. Yes, I see that.

Q. Now, one of the inputs -- we're moving on -- one of the inputs to your analysis is the amount of time that Neovasc

11:15 spent on the Tiara from October, 2009, to December, 2011, right?

A. That's right.

Q. In your calculation of that time, you include a time spent by Randy Lane that wasn't in Neovasc's records, right?

A. That's right.

Q. And you think that the estimate of Mr. Lane's time is important to your conclusions, right?
A. That's right.
Q. And you quantified Mr. Lane's unrecorded time by relying on a conversation with him, right?
A. That's right.
Q. And Mr. Lane told you that he had spent a total of 44.5 hours that were not recorded, right?
A. That's right.
11:16 Q. And you don't know how Mr. Lane was able to get that precise total number of hours, right?
A. I think, my understanding was that he checked some of his personal records.
Q. Okay, but when we deposed you in this case, you didn't know how Mr. Lane was able to get that precise total number of hours, right?
A. I don't know with precision.
Q. Say that again.
A. I don't know with precision.
11:16 Q. The question was, you didn't know how Mr. Lane was able to get that precise number of hours when we deposed you, right?
A. If that's what I said, that's possible.
Q. And this conversation you had with Mr. Lane, this was 2015, right?
A. That's right.

Q. And he was recounting in 2015 that the time he spent between 2009 and 2010 that he recorded, that he billed 44.5 hours?

A. That's my understanding.

Q. And you accepted his representation, right?

A. Yes, I did.

Q. Now, you also rely on Mr. Leinsing, right?

A. Yes, I do.

Q. And your report cites to Mr. Leinsing's report?

11:17 A. Yes, it does.

Q. You mentioned in your testimony you're relying on Mr. Leinsing for some public disclosures and whether or not there was a head start?

A. Yes.

Q. Now, prior to this case, you had never worked with Mr. Leinsing, right?

A. That's right.

Q. And prior to this case, you did not know Mr. Leinsing by his reputation, right?

11:17 A. That's right.

Q. And in fact, before this case, you didn't know Mr. Leinsing at all, right?

A. That's right.

Q. And even when you signed your report in this case, you hadn't even spoken to Mr. Leinsing at that time, right?

A. That's right. I relied on his expert report.
Q. Okay. And besides not speaking to him and not knowing his reputation, you still relied on his written report, right?
A. That's right.
Q. Now, let's talk a little bit more about the investigation that you did. You had access to Neovasc's personnel in the course of preparing your report, right?
A. That's right.
Q. And you or your staff spoke to Mr. Lane, Mr. Marko, and
11:18 Mr. Clark, right?
A. That's right.
Q. And the jury has heard from Mr. Marko and Mr. Lane. Mr. Clark is the CFO, right?
A. Yes.
Q. Chief financial officer?
A. Yes.
Q. And there was no information that you wanted that these gentlemen were unable to give you, right?
A. That's right.
11:18 Q. And you had a list of documents you considered. I think you discussed that you considered documents produced by the parties?
A. That's right.
Q. And you considered depositions?
A. Yes.

Q. And you considered actually the deposition of every fact witness that's testified at trial, right?
A. I think so. I'm not sure I know of every witness that's testified at trial.
Q. Mr. Marko, Mr. Lane, you read their depositions, right?
A. Yes, I did.
Q. You read Mr. Bavaria's fact deposition?
A. I think so, yes.
Q. Mr. Ratz's depositions?
11:18 A. Yes.
Q. Mr. Wagner's expert deposition?
A. Certainly.
Q. You've reviewed some third-party analyst reports?
A. Yes, I did.
Q. You've reviewed websites?
A. Yes.
Q. And when you did your analysis in this case, you knew that the TMVI market was expected to be pretty big, right?
A. That's right.
11:19 Q. And I think in your report you were aware that in 2015, there was a stock analyst report that estimated the long-term opportunity for the TMVI market in just the United States alone is about $10 billion a year? Am I right?
A. I don't recall the specific figures, but I know it was in the billions.

Q. Okay, but does it sound about right to you that in your report, you cited an analyst report that said $10 billion a year in the U.S. long term?
A. Long term, out many years from now is what we're talking about?
Q. Yes.
A. I think that's possible.
Q. But when you formed your opinions in this case, you didn't know whether in 2010 the overall market for TMVI products was
11:19 expected to be large, right?
A. I didn't have any specific figures as to the size of the market back in 2010. I don't recall seeing any analyst reports from that date.
Q. Okay. You didn't recall seeing any evidence about the size of the market back in 2010, right?
A. That's right.
Q. And you didn't see any evidence that would help you understand what Neovasc knew in 2010 regarding the size of the market, right?
11:20 A. That's right.
Q. And you didn't make any assumptions about what Neovasc may have known about the aortic marketplace, right?
A. That's right.
Q. But we heard Mr. Marko testify in his deposition video that back in 2009, he was aware that the aortic market was

worth billions of dollars, right?
A. I think that's right.
Q. Okay. And he also testified that he expected the TMVI market to be as big or bigger, right?
A. I recall that kind of testimony here at trial. I'm not sure I recall the deposition specifics.
Q. Okay, but you reviewed that deposition, right?
A. That's right.
Q. And despite reviewing that deposition, you couldn't make
11:20 any assumption about what Neovasc knew about the market back in 2010, right?
A. I think that's right.
Q. Okay, let's go to Mr. Wagner's Slide 6.1, please. This is Mr. Wagner's slide. You saw this when you were in court, right?
A. Yes, I did.
Q. He opined that each trade secret or I guess 1 and 2 together and then 3, 4, 6 were $90 million apiece?
A. That's my understanding.
11:21 Q. Okay. And you criticized Mr. Wagner for determining the same royalty for each trade secret, right?
A. That's right.
Q. You haven't determined yourself that any one of the five trade secrets that Mr. Wagner opined about is worth more or less than the other, right?

A. No, I haven't. I think they're all worth zero.
Q. Okay. You don't have any technical opinions about which of CardiAQ's trade secrets are minor improvements, right?
A. No, I don't.
Q. You don't have an opinion on the relative value of the Trade Secret 3 versus Trade Secrets 1 and 2, right?
A. That's right.
Q. And you're aware that Mr. Ratz testified that CardiAQ's trade secrets do have equal value, right?
11:21 A. I saw some -- I saw his trial transcript where he touched on that. I thought he said that some of them he thought had equal value but not all. I don't recall the specifics of that testimony.
Q. And you don't recall the specifics, but you're not suggesting that the jury should disregard Mr. Ratz's testimony regarding the equal value of the trade secrets, right?
A. I don't think the jury should disregard Mr. Ratz's testimony, no.
Q. Okay, you can take that down. Now, you criticized
11:22 Mr. Wagner for ignoring the cost approach, right?
A. I don't think that's fair. I criticize him for placing such heavy reliance on the income approach in the way that he has done it.
Q. Okay, but you did talk about the cost approach in your direct, right?

A. I did. I talked about my use of the cost approach, which I think is appropriate.
Q. I thought you said you didn't do a cost approach analysis.
A. I used a cost-type approach to analyze the reasonableness of Mr. Wagner's calculations. I did not do a cost approach in which I isolated the value of the intellectual property here because sufficient records weren't available to me.
Q. So just to be clear, you didn't value CardiAQ's trade secrets based on the cost approach, right?
11:23 A. Not specific trade secrets, that's right.
Q. And to analyze the cost approach, you looked at the evidence regarding the amount that CardiAQ invested to develop its trade secrets, right?
A. Among other things, yes.
Q. And are you saying that the cost approach suggests that CardiAQ's trade secrets are worth no more than $533,000?
A. No.
Q. Can we go to your report, please, Paragraph 58, and you should have your report in the binder there. Let me know if
11:23 you don't. And did you say in your report this when talking about the cost approach 53?
A. That's right.
Q. I'm sorry, Paragraph 58. I apologize.
A. I see that.
Q. "This suggests a valuation of the CVT trade secret claims

of no more than $533,000."
A. Yes, I see that.
Q. That's what you said in your report?
A. That's right.
Q. Now, you don't dispute that the market value of CardiAQ in early 2010 was a multiple of CardiAQ's R&D costs to that date, right?
A. That's right.
Q. And by the end of 2014, CardiAQ had spent about
11:24 $11.5 million in R&D, right?
A. That's right.
Q. And Edwards purchased CardiAQ the next year for $400 million, right?
A. That's right.
Q. Now, your introductory slide said that you're a frequent speaker on economic issues relating to damages, right?
A. Yes.
Q. And you said before that you have criticized the cost approach?
11:24 A. Yes, I have.
Q. Okay, let's go to Exhibit 719. This is a transcript from a talk that you gave, right?
A. Yes, it is.
Q. And when you were invited to give this talk at this symposium, you prepared in advance before giving your remarks,

right?
A. Yes, I did.
Q. In the course of making your presentation, you were trying to accurately describe the work you did in economic valuation, right?
A. That's right.
Q. And during that talk, you spoke about the cost approach to value trade secrets, right?
A. That's right.
11:25 Q. Let's turn to Page 12 of Exhibit 719 and see what you said. You said, quote, talking about the cost approach, "These measures often will understate the true value, and the example we always use is the Coca-Cola trade secret. Imagine how much it must have cost to create that formula for Coca-Cola versus the value of it today." That's what you said, right?
A. That's right.
Q. The same page you said, quote, "I think one of the places where the implementation of a cost approach goes wrong is that people focus too much on just out-of-pocket costs, cash cost to
11:26 develop things," right?
A. That's right.
Q. And during that talk, you were also asked about R&D cost as it relates to a hypothetical negotiation, right?
A. That's right.
Q. Okay, let's turn to Page 13 of Exhibit 719. The question

was, "How much weight does the R&D factor really get in the sort of hypothetical arm's length licensing factors test?" And your response was, "I have to say the one that we're least keen on is the cost approach. I think that one is most problematic." That's what you said, right?

A. Yes, I did.

Q. And then you said, "The income approach, I think, is where we place a little more weight because that really looks at how much money is at stake here. How much money could the

11:26 defendant make from this? How much money did the owner expect that he or she could make from it? That gives you a lot of guidance as to how much money would someone be willing to turn over, fork over in the term of a royalty payment. I think that is probably the one where we place the greatest emphasis," right?

A. I think that's right, and it's especially true in cases where products are actually being sold and revenue and profits are being earned.

Q. Okay. Can we have Mr. Wagner's Slide 6.10, please. Now,

11:27 Mr. Wagner relied on a 2015 internal Neovasc analysis, right?

A. That's right.

Q. And that analysis projected the sales that Neovasc would make of the Tiara?

A. Yes.

Q. And that analysis projected sales of $4.4 billion to

$8.5 billion?
A. That's right.
Q. Go back to your Slide 12. When you talked about Mr. Wagner's royalty being excessive and you showed the big $90 million bar next to all these other data points, you didn't include the $4.4 billion to $8.5 billion in projected revenue, right?
A. No, I didn't.
Q. Take that down, please. Mr. Wagner calculated the present
11:28 value of those projects, right?
A. Yes, he did.
Q. And he explained that he used a discount rate similar to what other stock analysts use, right?
A. That's right.
Q. And those analysts use a discount rate of 8 to 13 percent for the Tiara, right?
A. Well, I think that actually mischaracterizes things. I think there's an apples-and-oranges problem with those numbers.
Q. Those analysts use an 8 to 13 percent discount rate to
11:28 value the Tiara, right?
A. Yes. Those are the numbers that Mr. Wagner put up, but I think the 8 percent number is a little bit misleading.
Q. And these analysts, they used an even higher discount rate when they valued Neovasc as an entire company rather than the Tiara as a specific entity, right?

A. I'm sorry. Could you repeat that question.
Q. Sure. We talked about the 8 to 13 percent discount rates for the Tiara by itself. Those analysts also used a higher discount rate of about 25 percent when they valued the entire Neovasc company?
A. I don't recall seeing discount rates of 25 percent which were the basis for Mr. Wagner's opinion. I don't recall the distinction between the product versus the company.
Q. Now, you believe that an even higher discount rate of
11:29 40 percent is appropriate for the Tiara, right?
A. Yes, I do.
Q. And just to remind the jury, I think you said that the higher discount rate means lower damages, lower royalty?
A. That's right.
Q. I believe you criticized Mr. Wagner for two reasons. On your slide, you said the first was that he failed to express the 2015 valuation in 2010 dollars?
A. That's right.
Q. But you're not saying that we should use a 40 percent
11:29 interest rate to take 2015 dollars and put them in 2010 dollars, are you?
A. That's not right. I did use a 40 percent discount rate for the whole period.
Q. So you're saying, if we wanted to take 2015 dollars -- and forget about the risk for a second -- I know that was your

second bullet -- if we want to take 2015 dollars and express them in 2010 dollars, you would use a 40 percent rate for that?
A. Yes, to account for both the time value of money and the uncertainty.
Q. I'm talking about just the time value of money right now. Just the time value of money, you wouldn't use 40 percent to take 2015 dollars and put them in 2010 dollars, would you?
A. Well, you can't separate it out because the purpose of the discount rate is to account for both things, both the time
11:30 value of money and the uncertainty.
Q. If you were going to value 2015 dollars in 2010 dollars, would you use a 40 percent rate?
A. In this case, yes.
Q. Just by itself without accounting for uncertainty?
A. We're using the discount factor here to account for two things, the difference in the time value of money and the uncertainty, so in this case it's appropriate to use the 40 percent to discount the numbers back to 2010.
Q. Okay, and I'm asking you as an economic expert that went
11:31 to the London School of Economics, do you have the ability to separate out and do you have the ability to put 2015 dollars into 2010 dollars? Can you do by itself if asked?
A. It would depend on the context of the exercise, but for the purposes here, I'm trying to analyze the outcome of a hypothetical negotiation in 2010 based on cash flows that are

six to ten years in the future, and the riskiness of those cash flows affects the discount rate that one would use.
Q. If I ask you to put aside risk and just tell me what 2015 dollars are in 2010 terms, if I'm looking at a price of something, the value of something, and I want to see how much that would have cost in 2010, could you do that?
A. In general, yes, but that wasn't the exercise here.
Q. Well, that's my question. That's my question. That's my question. Could you do that?
11:32 A. You mean hypothetically speaking could I --
Q. If I put an inflation calculator and I wanted to see 2015 dollars, what they were worth in 2010, would I use a 40 percent rate for that?
A. No.
Q. Okay, thank you. So let's talk about some of the uncertainty. You mentioned there was some uncertainty concerning whether Neovasc would reach certain regulatory milestones, right?
A. That's right.
11:32 Q. And those milestones included animal studies and a first in-human implant, right?
A. That's right.
Q. And the hypothetical negotiation is a license to use CardiAQ's technology in the Tiara, right?
A. That's right.

Q. And we're assuming liability, so we're assuming that the Tiara is using CardiAQ's technology, right?
A. That's right.
Q. And when you discussed uncertainty, you didn't address the fact that CardiAQ by the time of the hypothetical negotiation had successful animal trials, right?
A. I don't think I addressed that specifically.
Q. And you didn't address that Neovasc knew that CardiAQ had already had successful animal trials by the time of the
11:33 hypothetical negotiation, right? You didn't address that?
A. That's right.
Q. And you didn't address that before March, 2010, CardiAQ had already received investment money from Broadview Ventures, right, and discussed that?
A. I'm sorry, can you repeat that question.
Q. Yes. Before March, 2010, Broadview Ventures had already invested in CardiAQ at that point in their technology, right?
A. Excuse me. I think that's right, yes.
Q. And Broadview, they're being advised by Dr. Eric Rose,
11:33 right?
A. I don't recall.
Q. Do you recall Dr. Bavaria's testimony?
A. No, I don't.
Q. Have you been getting the daily transcripts? I know a lot of times the experts do that.

A. Yes, I have.
Q. Okay, and you mentioned earlier in your direct you read some of the testimony from Dr. Quadri and Mr. Ratz, right?
A. That's right.
Q. Okay, but you missed Dr. Bavaria's testimony?
A. I actually read his testimony. I just don't remember the specific fact you're pointing to.
Q. Okay. And do you remember Dr. Bavaria explaining that Dr. Rose is a world-renowned cardiac surgeon?
11:34 A. I didn't read the testimony. I don't know.
Q. Okay, so you obviously didn't take that into account in --
A. I'm sorry. I did read the testimony. I don't remember the testimony, so I don't know.
Q. Okay, so it's fair to say then that you didn't take that testimony into account when you were talking about the risk factor and uncertainty factor, right?
A. Are you asking me if I took into account the testimony at trial when I was developing my opinions in my report?
Q. You didn't mention in your report or on your direct when
11:34 you were talking about uncertainty that Dr. Rose before the hypothetical negotiation had advised Broadview Ventures to invest in CardiAQ, right?
A. I didn't mention that, that's right.
Q. And you didn't mention that before the hypothetical negotiation Mr. Michiels had joined CardiAQ's board and

invested, right?
A. That's right.
Q. And Mr. Michiels we heard was a CEO of CoreValve, right?
A. That's my understanding.
Q. It sold for a lot of money to Medtronic, I think over $600 million?
A. I don't recall the numbers. I do recall him testifying about that.
Q. You recall they were big numbers, right, on the aortic side?
11:35
A. I think that's right.
Q. And Mr. Michiels was involved in other interventional cardiology device companies, right?
A. Yes. That's my understanding.
Q. Now, let's look at Exhibit 357. Look at Neovasc's reaction when they found out about Mr. Michiels becoming involved with CardiAQ. Do you see the URL at the bottom here? It says "CoreValve-backers-see-next-heart-valve-hit-in-CardiAQ"?
11:35
A. I see that.
Q. This is referring to the fact that Mr. Michiels is on board now, right?
A. I don't know. Is this a document -- I don't recall this document. It may be included in the materials I considered, but I don't recall.

Q. I'm pretty sure it is.
A. Okay.
Q. You read all the depositions, and when you read the depositions, you also said in your documents considered that you read the exhibits used in the depositions, right?
A. That's right.
Q. Okay. So let's see what Neovasc's reaction was when they found out that Mr. Michiels joined CardiAQ. The top here, Mr. McPherson, he's the COO, right? We heard from him early in
11:36 trial?
A. That's right.
Q. He said, "It speaks to the value of the technology," right?
A. I see that.
Q. And you didn't mention that when you were talking about uncertainty, did you?
A. This is referring overall to the value of a TMVI device, not the particular trade secrets here, right?
Q. You don't know? Well, he's talking about the value of the
11:36 CardiAQ technology. No?
A. Excuse me, the CardiAQ, but it's the overall technology for the devices, not just the specific trade secrets.
Q. And you don't know the difference between the overall technology and the trade secrets, right? You haven't analyzed that, have you?

A. I'm not a technical expert, but I have an understanding that there are aspects of the device -- of the devices that are not disclosed in the trade secrets.
Q. But you don't know what that is and what that isn't, do you?
A. I don't have a technical understanding of that, that's right.
Q. You don't have much of any understanding, right?
MR. GRAVES: Objection.
11:36 THE COURT: Sustained.
Q. Sorry. And you also agreed earlier that it's proper to look at events that occur after the date of the hypothetical negotiation to factor into a reasonable royalty, right?
A. In general, yes.
Q. And we know now indeed that Neovasc did meet these milestones that you talked about, right?
A. Yes, that's right.
Q. Now, despite this, you picked a 40 percent discount rate based on the uncertainty at the hypothetical negotiation,
11:37 right?
A. That's right.
Q. And you didn't see any evidence that a 40 percent discount rate should be used in the evaluation of a medical device start-up, right?
A. I think a lot of the information I reviewed was just to

start-ups generally or to biotech start-ups, but not specific to medical device start-ups, but there was no reason to think it would be different.
Q. And the finance text and literature that you referred to in your report to support the 40 percent discount rate, those aren't specific to transcatheter medical devices, right?
A. No, they're not, but that 40 percent was on the low end of the numbers I saw. I saw discount rates up to 70 percent or so.
11:38 Q. And none of those texts are medical device texts in general, right?
A. That's right.
Q. And the discount rate is a critical input to your analysis, isn't it?
A. As it is for Mr. Wagner, yes.
Q. And your calculations are very sensitive to the discount rate, right?
A. They are, that's right.
Q. And if you would have used a smaller discount rate, you
11:38 would have gotten a larger number for the reasonable royalty at the end of your analysis, right?
A. If I had used a smaller discount rate, I would have gotten a larger corrected baseline royalty, but the royalties also informed -- yes, I think that is true. It's also informed by the head start, but I think that's true.

Q. You calculated damages assuming that Neovasc did not get an 18-month head start, right?
A. In my corrected calculations, I assumed either a zero or a maximum of a three-month head start.
Q. So then you calculated damages assuming that Neovasc did not get an 18-month head start, right?
A. That's right.
Q. And if the jury concludes that Neovasc did get at least an 18-month head start, that would impact your opinion, right?
11:39 A. I don't have a number that associates with that.
Q. But it would impact your opinion if the jury believed that Neovasc got an 18-month head start, right?
A. It could. It could affect the damages.
Q. You haven't done an analysis to quantify how much your opinion would change assuming an 18-month head start instead of the maximum three-month head start like you calculated, right?
A. As I testified at my deposition, my calculations included the possibility of a 12-month head start, which gave an $8 million figure, but I didn't do a calculation with respect
11:39 to 18 months.
Q. And you didn't present even the one-year head start in your direct testimony either, right?
A. No, because I don't see any evidence that that's appropriate.
Q. Now, I think we established early on and you established

in your direct that you're not a technical expert?
A. That's right.
Q. You're not an expert in the medical field? Pardon me? You haven't developed an opinion whether Neovasc gained a head start from access to the information in dispute in this case, right?
A. No. I don't have a technical opinion on this.
Q. You're not weighing the evidence on whether Neovasc really got a head start, right?
11:40 A. That's right.
Q. You're not saying as part of your opinions the individuals at Neovasc are inherently more trustworthy than the people at CardiAQ? I think we discussed that earlier.
A. We did.
Q. Now, despite the fact that you haven't developed an opinion on whether Neovasc obtained an 18-month head start, I think you had a slide up that said you believe that the 18-month head start is unreliable?
A. That's right.
11:40 Q. I think you pointed out in a slide that Mr. Wagner does not identify any assumption or reliance on actual review of Neovasc development records? You said that too?
A. That's right.
Q. You understand that Mr. Wagner is not opining, he's not telling the jury whether or whether or not Neovasc got an

18-month head start, right?
A. I do understand that. He's relying on Mr. Ratz.
Q. Okay, and we'll get there. And you don't dispute that it's up to the jury to determine Neovasc got an 18-month head start?
A. No, I don't.
Q. And you don't dispute that the jury can consider the entire record at trial to make that determination, right?
A. I don't dispute that.
11:41 Q. So the jury can rely on Mr. Ratz, anybody else, all the information at trial the jury can use to come to the conclusion to determine that Neovasc got at least an 18-month head start, right?
A. They can consider all of the information that's at trial, that's right.
Q. You put up a timeline. That was your Slide 20 with the normalized timelines. You aren't purporting to give an expert opinion that this timeline suggests that Neovasc did not obtain an 18-month head start, are you?
11:42 A. No. I'm just pointing out that a review of the timelines is inconsistent with an 18-month head start opinion.
Q. And you're not giving an expert opinion that this timeline undermines an 18-month head start, right?
A. No.
Q. Let's talk a little bit about the timeline. I think you

pointed out that we have CardiAQ up top and Neovasc on the bottom?
A. Yes.
Q. And we've got date one. It's a little fuzzy for me. Date one up here is when CardiAQ began its development of its technology, right?
A. That's right.
Q. And at the end we've got the first in human?
A. That's right.
11:42 Q. At the bottom, this is October, 2009, when Neovasc first started, right?
A. Yes.
Q. And then Neovasc gets the first in human about five months later?
A. Five months after CardiAQ, yes.
Q. And you're suggesting this shows that there's no head start?
A. Well, I just don't see any evidence. It's not consistent. As I said in my testimony, it's not dispositive. It just is
11:43 not consistent with. I don't see any big advantage here.
Q. Okay, so just so we're straight, you're not using the timeline to give an opinion that there's no head start. You're just saying that the timeline is inconsistent with a head start?
A. Right. I examined the timeline because I was looking for

evidence to assess the reliability of the assumption because it was an important input to the damages analysis.
Q. And that's because, if you normalize them and you look at the time they started, from the time they started, they got to first in human about the same time. Maybe Neovasc was a few months later, right?
A. Right.
Q. But you said earlier, for the first five to six months, Neovasc had only put about 44 hours into this, right?
11:43 A. That's right.
Q. And that's about the same as this gap where they're behind, right?
A. I'm sorry, 44 hours is one week? I'm sorry. I don't follow you.
Q. Okay, well, the period from October, 2009, to April, 2010, that period when Neovasc only billed about 44 hours to the Tiara, right?
A. That's right.
Q. About five to six months they didn't really do anything,
11:44 right?
A. That's right.
Q. And we see that they're about five months behind on the timeline, right?
A. I see that.
Q. You also mentioned that for about the first 20 months,

Neovasc didn't really put a lot of effort in. It only really became a project in June, 2011, right?
A. Yes.
Q. That's somewhere over here it became a project?
A. That's right.
Q. So Neovasc really doesn't put any effort till here, and then at the end of the game, they're not too far behind, right?
A. Yes, I see that.
Q. And you still think this timeline is inconsistent with
11:44 showing that Neovasc got a head start?
A. Yes.
Q. Now, you haven't made any quantitative assessment of the parties' relative capabilities, right?
A. That's right, I haven't.
Q. And you can't rule out that misappropriating CardiAQ's trade secrets allowed Neovasc to spend limited resources for the first 20 months of its program and still get to first in human in only a few more months than CardiAQ, right?
A. I'm sorry, could you ask the question again?
11:45 Q. Sure. You can't rule out that by misappropriating CardiAQ's trade secrets, that allowed Neovasc to spend limited resources for the first 20 months and still get to first in human at a similar time frame as CardiAQ, right? You can't rule that out, can you?
A. Well, I don't know, and we know that a lot of the trade

secrets were available just in April, 2010, very early on, so six months or so into the development. So it's not clear whether it's use of the publicly disclosed information. There is some fuzziness there.

Q. And you're not a technical expert, so you can't evaluate the value of that public information, right?

A. I'm not a technical speaker, that's right.

Q. And you don't know the extent to which Neovasc did or didn't use that public information, right?

11:46 A. I think for my purposes, it's sufficient to know they had access to it. The trade secret value terminates when the information becomes public.

Q. And you don't know how much of the trade secrets were in those public disclosures, right?

A. It's my understanding from Mr. Leinsing that virtually all of the trade secrets were public as of the April, 2010 patent application.

Q. But you haven't done an assessment as to how valuable that was to Neovasc, right?

11:46 A. I'm not a technical expert, so I have no technical opinion on that. I'm relying on Mr. Leinsing.

Q. I think you also relied on Mr. Leinsing's opinion that Neovasc's development time line for the Tiara was normal? You relied on that in your report?

A. Yes, that's right.

Q. Mr. Leinsing explained yesterday that he didn't compare Neovasc's timeline to any other specific companies, right?
A. That's right.
Q. And Mr. Leinsing did not compare Neovasc's timeline to any other specific products, right?
A. That's right.
Q. Instead, Mr. Leinsing only compared Neovasc's timeline to CardiAQ's timeline, right?
A. I don't recall. I think Mr. Leinsing's opinion was based on his experience in the industry, but I don't recall the specifics.
Q. It was your Slide 30, you said you calculated damages based on a head start of zero to three months?
A. That's right.
Q. And the zero number, that comes from relying on Mr. Leinsing's opinion that CardiAQ's trade secrets were public as of March, 2010, right?
A. No.
Q. No?
A. No.
Q. Okay, let's look at your expert report. Well, let me ask the question again. That zero number comes from relying on Mr. Leinsing's opinion that CardiAQ's trade secrets were public before the date of the hypothetical negotiation, right?
A. No. As I said in my direct testimony, I have to assume

liability. That comes from Mr. Leinsing's testimony and his opinion as expressed in his report that there was no head start.

Q. Okay, let's look at your report in Paragraph 85. You say "Moreover, as described previously and opined by Mr. Leinsing, all of the CVT trade secret claims were disclosed publicly prior to the hypothetical negotiation. Thus, there is no evidence of a Neovasc head start associated with the access to the CVT trade secret claims." That was your report, right?

11:48 A. Yes.

Q. Let me look at Paragraph 112. You say, "Third, I note that the evidence shows that CVT's trade secret claims were disclosed publicly as early as March, 2010, and no later than December, 2011. As described previously, this suggests a maximum potential head start ranging from zero to three months." That was your report, right?

A. That's right.

Q. And, remember, we established earlier that if all of CardiAQ's trade secrets were publicly disclosed before the

11:49 hypothetical negotiation, there would be no liability, right?

A. That's right.

Q. And you're supposed to assume liability, right?

A. That's right.

Q. Can I have Slide 23, please, or 20 through 22 let's try it. I'm not sure. Yes, you talked about some of the things

that Mr. Wagner failed to consider for that 18-month assumption?
A. That's right.
Q. Okay, but I think we established earlier, Mr. Wagner is not giving an opinion on whether or not there's an 18-month head start, right?
A. That's my understanding.
Q. And you mentioned a number of factors up here that Mr. Wagner failed to consider?
11:50 A. I think what I mean to say here is, these are -- these are factors that one would need to consider before one assumed that the timeline experienced by CardiAQ would be equivalent to the timeline experienced by Neovasc, so whoever is going to make this assumption would need to consider these things.
Q. Okay. And you didn't consider any of these things, right? You're not offering an opinion on any of these elements?
A. No.
Q. And you're not saying that it's CardiAQ's position that it's relying only on a one-to-one time ratio to establish that
11:50 Neovasc got at least an 18-month head start, right?
A. I don't know. My understanding is that Mr. Wagner is relying on Mr. Ratz, and that Mr. Ratz said that that's where he got the number.
Q. You testified earlier in your direct, you talked about some of the testimony you heard at trial, right?

A. That's right.
Q. That was after your report. You understand the jury can rely on all of the testimony at trial to determine how much of a head start Neovasc got?
A. Yes, I do.
Q. I'd like to discuss your three-month head start. You talked about there being a three-month head start that Neovasc may have gotten? That was the maximum?
A. I talked about a maximum calculation, yes, of three months.
Q. Okay, and I think you started on your Slide DTX 7. Can we have that. You assume that the Rev. E device published at least by December, 2011?
A. That's my understanding, yes.
Q. Okay. But you understand the actual device didn't publish, right?
A. My understanding, it was a patent application with detailed drawings.
Q. Yes, the device itself didn't publish, right?
A. That's my understanding.
Q. Okay. So no one in the public could actually just go, order up their own copy of a Rev. E prototype, right?
A. That's consistent with my understanding.
Q. And you don't know if there were enough details in the patent to build a Rev. E device just like the one that CardiAQ

gave to Neovasc, right?
A. I don't have an opinion on that.
Q. The patent does not have dimensions, does it?
A. This is getting into technical areas that aren't my expertise. I think I heard Mr. Leinsing testify about that yesterday, but I can't opine on that.
Q. And someone reading a patent doesn't just have the ability to go speak with the inventor, right?
A. I guess that depends on who's reading the patent.
11:52 Q. But most people in the public and if CardiAQ wasn't working with Neovasc, Randy Lane couldn't just dial up Mr. Ratz and say, "Hey, I saw your patent. Could you explain it the me"?
MR. GRAVES: Objection, your Honor. This is getting outside the scope of what she's here to do.
THE COURT: Sustained.
Q. Well, CardiAQ's patent doesn't have the results of the animal tests that Mr. Ratz showed to Mr. Lane, right?
MR. GRAVES: The same objection, your Honor.
11:53 THE COURT: Sustained.
Q. The patent doesn't have CardiAQ's entire design history, right?
MR. GRAVES: Your Honor, I object again and would like to have a sidebar if these types of questions are going to continue for scope reasons.

THE COURT: I'm going to sustain the objection.

MR. HORNE: Okay.

Q. Let's turn to your Demonstrative 14. You determined that if eleven employees worked 473 hours, they could do about 5,200 hours of work in 2.8 months, right?

A. That's right.

Q. And you're assuming that during this approximately three-month period, the Neovasc employees are not working on any other projects, right?

11:53 A. This would assume full-time effort, that's right.

Q. And when you formed this theory, you didn't discuss it with anyone at Neovasc, did you?

A. No.

Q. And you didn't vet your theory with anyone with experience in the TMVI industry, did you?

A. No.

Q. In fact, we know that you didn't talk to Mr. Leinsing before your report and this opinion because you didn't -- and you didn't discuss your theory with him then, right?

11:54 A. That's right.

Q. And no one from Neovasc has come to trial and testified that it could or would have condensed the work, the two years of work from October, 2009, to December, 2011, in the three months, right?

A. No, but I don't think I'm really saying that. As I

testified on direct, this is kind of an artificial construct just to think about, to illustrate really the level of effort that Neovasc was undertaking in that time frame, to examine whether it would have been feasible potentially for them to catch up in the several-year period between the disclosure of the trade secrets publicly and the valuation of Tiara that forms the basis of Mr. Wagner's royalty analysis.

Q. So your three-month maximum head start, is it artificial construct?

11:55 A. Yes.

Q. And you're not saying that Neovasc could condense the two years' worth of work into three months?

A. I think we talked about this at length at my deposition. I'm using this as an illustration of a potential maximum head start as an upper bound, but I think what likely really would have happened is that Neovasc would have started development around April, 2010, when the first disclosures came out, and then been able to continue working right along. So I don't think it's accurate or fair to characterize that as an

11:55 assumption that they wouldn't have done anything prior to -- that in the real world, they wouldn't have done anything prior to 2011.

Q. I want to just ask you some questions about your maximum. You said the three months is the maximum, right?

A. Yes, that's right.

Q. And Neovasc has known for a long time that the potential market for a TMVI device is worth billions of dollars, right?
A. I think we talked about this earlier. I think that there was general knowledge that it was a large market, market opportunity. I don't know exactly what numbers Neovasc placed on that early in the period.
Q. They knew it was pretty big, right, a lot of money at stake?
A. I think that's fair.
11:56 Q. And you agree that -- you may dispute on whether it's essential, but you would certainly agree it would be beneficial to be first to market, right?
A. Yes.
Q. And you would agree that that's a big economic incentive, right?
A. It could be an economic incentive, that's right.
Q. And despite that incentive, you haven't cited any evidence that Neovasc ever dedicated eleven employees full time to work on the Tiara, right?
11:56 A. As I understand it, in this early period, from Mr. Marko's testimony, Neovasc was balancing its different corporate objectives, its need to make money and revenue to sustain the business versus developing or spending time on intriguing potential new projects.
Q. My question is a little bit different, though. You're not

aware of any evidence, we haven't heard any evidence at trial that ever before or after this December, 2011 time frame, that Neovasc has ever dedicated eleven people to work on the Tiara full time, right?

A. I don't recall seeing evidence on that.

Q. We're still on Slide 14. So we're talking, this three months assumes that the eleven employees would work 473 hours over the 2.8 months, right?

A. That's right.

11:57 Q. And this is based on, I think you said, all of the work that Neovasc did on the Tiara up through December, 2011?

A. Yes, it is.

Q. Okay. And Randy Lane was the lead engineer on the Tiara, right?

A. That's right.

Q. He was the primary inventor on the Tiara patent, right?

A. That's my understanding.

Q. And we heard testimony that this project, to be colloquial, was pretty much -- I mean, this is Randy Lane's

11:57 baby, right? This is his project?

A. That's my understanding.

Q. Okay. And your expert report doesn't say anything about running this three-month theory past Randy Lane, right?

A. That's right.

Q. And do you know how many hours Randy Lane billed on the

Tiara up through December, 2011?
A. I have that information in my report.
Q. Do you know?
A. Not off the top of my head.
Q. Do you have an idea?
A. I looked at it, but I don't remember the number.
Q. Okay. He billed about 1,319 hours, right?
A. I can check it if you'd like, but I'll be happy to take your representation.
11:58 Q. Sure, it's on your schedule. We can go to Exhibit 2251, the last page. This is an exhibit you prepared. You looked at Neovasc's time records, right, and then you prepared this exhibit?
A. That's right.
Q. And the last page, I believe, it has the total time for 2010 and 2011? It's got Randy Lane there at the bottom?
A. I see that.
Q. And on the right he billed about 1,300 -- well, about -- he billed 1,319 hours in 2010 and 2011 for the Tiara?
11:58 A. I don't think so.
Q. No? It says "Tiara"?
A. Excuse me. I'm sorry. I'm looking at the wrong number. 1,300 hours, yes, that's right.
Q. And that doesn't include the 44 hours before April that Mr. Lane didn't record, right?

A. That's right.
Q. So in order to get this project done in 2.8 months, Mr. Lane would have had to bill 1,363 hours in 2.8 months, right?
A. I'm sorry. I can accept your math, I think.
Q. You can accept?
A. I think I can.
Q. Okay. And that would be 486 hours per month, right?
A. That's right.
11:59 Q. And that's more than 15, almost 16 hours a day seven days a week billed to the Tiara, right?
A. That's right.
Q. And you don't think that you can necessarily assume there's a one-to-one ratio between time billed and time in the office, right?
A. I'm not sure I know what you mean by that question.
Q. Well, you're a time biller, right?
A. Yes.
Q. As am I. You know that when you're billing an eight-hour
12:00 day, it doesn't mean you're necessarily in the office only eight hours, right? The phone rings, you want to talk to a family member, you want to talk to a friend at the water cooler about the hockey game, a TV show, you don't bill that time, right?
A. That's right.

Q. So he's got to bill 15.7 hours a day every day seven days a week, not accounting for talking to family, talking to a friend, a doctor's visit, or anything like that, right?
A. That's right.
Q. And in all the time sheets that you reviewed, Mr. Lane had never even come close to billing 486 hours in a month, right?
A. I don't know the answer to that.
Q. Would you accept my representation that that's true?
A. Yes, I will.
12:00 MR. HORNE: I have no further questions.
THE COURT: Thank you.
MR. GRAVES: Do you want me to follow up, or should we take the break?
THE COURT: How long do you think your follow-up is going to be?
MR. GRAVES: Two minutes, three minutes.
THE COURT: Let's go ahead and do it.
REDIRECT EXAMINATION BY MR. GRAVES:
Q. Ms. Mulhern, you were asked just a moment ago about what
12:01 would happen if Randy Lane worked pretty much every hour of every day. Did your review of the records show whether any other Neovasc employees were working on the Tiara project in the years 2010 and 2011?
A. Yes. There were quite a number of other employees working on the Tiara project.

Q. Is it fair to say that he wasn't the only one working on that project during that period?
A. Yes, that's right.
Q. You were also asked about something that you had said in a seminar about the Coca-Cola trade secret, and I just want to ask you some questions about that too. Do you have an understanding of when the Coca-Cola formula trade secret was developed?
A. Actually, it was many, many years ago. I don't remember.
12:01 Q. Is it fair to say it was over 100 years ago?
A. Yeah, I think that's probably right.
Q. And as far as you understand it, is that still a trade secret today, or has it been publicly disclosed?
A. It's still a trade secret, absolutely. They keep that under lock and key.
Q. Based on your reliance on Mr. Leinsing's testimony about public disclosures, is there a difference in this context between a 100-year-old Coca-Cola formula that's still secret and the type of information we're dealing with in your
12:02 analysis?
A. Absolutely. This is information that was disclosed publicly in patent applications within months.
Q. You were also asked about the cost approach and your differences with Mr. Wagner there. Why is the cost approach, in your view, as you described it earlier, the best way to do

it in this case?
A. In this case, I think the cost approach is appropriate because -- especially as I've used it, for a reasonableness check on Mr. Wagner's methodology -- because, again, the income approach relies on a study of revenues and profits from products. These products are not yet earning revenues and profits, and there is substantial uncertainty over whether they will. In fact, some of the estimates I looked at before putting in my report still say there's only a 50/50 chance of
12:03 the Tiara coming to market in the U.S. as of late 2015.
Q. You were also asked a question about why you had used $533,000 to talk about the information from CardiAQ at the time of the hypothetical negotiation in March, 2010, instead of using the $400 million that Edwards paid for CardiAQ some five years later. Can you explain for the jury, Ms. Mulhern, when you were thinking about the hypothetical negotiation as of March, 2010, why did you use that roughly half-a-million-dollar number instead of plugging in the $400 million number from five years later?
12:03 A. Well, that $400 million number wouldn't be appropriate. First of all, it's the value of the whole company, not just the R&D. That was valued substantially lower, I think, at $190 million. But even setting that aside, that valuation, of course, doesn't account for the uncertainty that was applicable as of March, 2010. As I testified, the project was in its

infancy, and there's no one who would have paid that kind of money for the company at that time.

Q. So I want to ask you just one more question, and it kind of gets to that same point. You were asked whether it's okay when you think about a hypothetical negotiation in March, 2001, to take account of some things that happened later. Do you agree or disagree between you and Mr. Wagner on the degree to which you're supposed to take things into account that happened in the future when you think about these models?

12:04 A. So I think I can generally agree that the courts do allow us in considering the outcome of a hypothetical negotiation, they do allow us to think about things that become known in the future; for example, to look at what we now know about the market opportunity or potential market shares of the products. But the courts also specifically require us to set that hypothetical negotiation at the time of misappropriation, which means the value we come up with needs to be consistent with that time frame.

Q. And how do you differ with Mr. Wagner on that particular

12:05 piece of the analysis?

A. So, in my view, I think he has completely ignored the fact that the hypothetical negotiation would have happened in 2010; whereas, in my view, it's an important consideration I've taken into account along with some information that became available subsequently.

MR. GRAVES: Thank you, Ms. Mulhern. I have no further questions.

MR. HORNE: No questions, your Honor.

(Witness excused.)

THE COURT: All right, let's break for lunch. We'll see you back here in about 45 minutes, 12:50.

THE CLERK: All rise for the jury.

(Jury excused.)

THE COURT: All right, did you give them the new draft, Jonathan? We have a red-line version for you of the first half of the instructions. We can go over them now or take a break and come back in half an hour and then go over them. The red lines are fairly minor. Does anyone see any big-ticket items in this that's going to require more than 15 minutes?

MR. SGANGA: It may be better, your Honor, to come back in half an hour.

THE COURT: Okay, so do you want to come back, like, around 12:30?

MR. SGANGA: That would work, yes.

THE COURT: 12:35? And no one sees any big items that are going to take longer than 15 minutes to sort through on this?

MS. BAL: No, your Honor.

THE COURT: Okay, so let's say 12:35 then, okay?

(Noon Recess, 12:06 p.m.)

(Resumed, 12:38 p.m.)

THE COURT: Okay, questions, comments, concerns?

MS. LEA: Yes, your Honor. We have a friendly amendment, if we may.

THE COURT: I prefer the friendly to unfriendly, but I'll take either.

MS. LEA: Okay.

So this would be on page 2, and I'm working off the
12:39 non-redline, but on page 2, there's a paragraph that starts "CardiAQ bears the burden of proving."

THE COURT: Yes.

MS. LEA: And we would like to add at the beginning of that sentence, "Unless I instruct you otherwise," and that's to take into account the differing burden --

THE COURT: I get it.

MS. LEA: And one more.

THE COURT: Yes.

MS. LEA: At the end of that paragraph, we would like
12:39 to add, "Neovasc also bears the burden of proving some of its defenses by a preponderance of the evidence, and I will instruct you about that in the specific instructions."

THE COURT: Are you talking about unclean hands and duty to mitigate?

MS. LEA: Well, we don't think those should be

instructed on at all, but, certainly, if they were. But we are talking about their burdens under the contract, it's their burden to show the information was public or independently developed.

THE COURT: All right.

Before I get to that, it's not my intention to instruct on unclean hands or duty to mitigate. I don't understand how either one of those play into this case.

MR. BOEHM: Would you like me to speak to that right now, your Honor?

12:40

THE COURT: I would like to tell you that before we amend the instruction today, I'm not going to be able to resolve it now.

So tell me again what you wanted?

MS. LEA: And I can hand up a written copy if that's easier, but, "Neovasc also bears the burden of proving some of its defenses by a preponderance of the evidence, and I will instruct you about that in the specific instructions."

THE COURT: That you'll get tomorrow.

12:41

I think that covers every eventuality, right?

MR. BOEHM: Yes.

THE COURT: Okay.

Anything else from either side?

MS. LEA: Nothing from us.

MR. BOEHM: We're good.

THE COURT: We've identified the defendants as Neovasc Inc. and Neovasc Tiara, Inc. and then lumped them together as Neovasc and we're intending to do those on the verdict form, too. Any reason why they need to be separated out? I don't think there's been anything in support of that.

MR. BOEHM: No, your Honor.

THE COURT: And what about -- any thought about do you want me to not tell or tell them there may be transcripts available in certain limited situations?

12:42 MS. LEA: We're okay with that, your Honor.

MR. FLYNN: Your Honor, we prefer not to.

THE COURT: Okay. Then I won't.

All right. So we'll give them --

MR. FLYNN: Your Honor, may I raise just a procedural point?

THE COURT: Yes.

MR. FLYNN: I think we should rest in front of the jury.

THE COURT: I agree.

12:42 MR. FLYNN: We are then going to have some JMOLs that I think should be presented outside the presence of the jury.

THE COURT: Do you want to make those now?

MR. FLYNN: That's fine with me, if that's fine with you.

THE COURT: We sent them out at five past 12, so we

have another eight or ten minutes.

MR. SGANGA: Your Honor, can we move in our remaining exhibits if we're going to keep the sequence here?

THE COURT: Yes.

MR. HORNE: From Ms. Mulhern's cross, we have Exhibit 358, 384, and 719.

THE COURT: Any objections to those?

MR. BASKIN: No objection.

(Exhibits 358, 384, and 719 received in evidence.)

12:43 THE COURT: Any other exhibits?

MR. BASKIN: We still have three outstanding objections from CardiAQ.

THE COURT: Yes. We'll get back to you on those. He's working on the jury instructions.

Those don't need to be resolved before I give them a preliminary charge.

Does anybody feel they need to be? Procedurally they should be, is anyone going to insist on that?

MR. SGANGA: I don't think anything is going to happen

12:43 between now and then --

MR. BASKIN: As long as we can reserve the right to admit them for the jury to review.

THE COURT: Yes.

Okay. Do you want to go ahead and make your motions?

MR. FLYNN: Yes, your Honor.

Defendants move for judgment as a matter of law on two of plaintiff's claims for relief. The first is the claim under Chapter 93A, Section 11. That motion is based on 50(a) and/or 50(c) to the extent any issues are presented to the jury for an advisory verdict.

Second motion is based on 50(a), and it's with respect to the claim for breach of the Canadian duty of honesty and contractual performance under 50(a). We have short briefs, your Honor, that we'd be happy to file. We can also make these orally.

12:44

THE COURT: If you want to file the briefs, you can. I'll take a look at them now, and then -- I'm going to go ahead and give them the preliminary charge because there's obviously something that's going to go to the jury, so I'm not feeling any huge pressure to sort these out before we let them go for the day.

MR. FLYNN: I think that's right, your Honor.

THE COURT: And then my proposal -- so why don't you pass those up.

12:45

My proposal for after that is we probably need another I'm guessing like an hour to get our charges final. So I'll give you an hour off, and then come on up and give them to you and take -- how much time do you think you'll need to look at them once we --

MR. SGANGA: I think an hour would be good, your

Honor.

MR. BOEHM: Likewise.

THE COURT: We'll take an hour and then take an hour to reconvene.

MR. SGANGA: Can we also put a Rule 50(a) motion on the record, your Honor?

THE COURT: Yes.

MR. SGANGA: This is as to the contract defenses under the non-disclosure agreement. Plaintiffs move under Rule 50 that Neovasc has not met its burden of proving independent development, and likewise failed to prove that the information provided to Neovasc was available in the public domain or already known to Neovasc. And we also -- to the extent that there's anything for the jury on the mitigation defenses or the unclean hands defenses, we'd likewise move on those. And we can submit briefing on this as well.

THE COURT: Okay.

Why don't you hand up all the briefs --

MR. BOEHM: We're actually in the process of filing on ECF right now.

MR. SGANGA: If we could do that later, your Honor.

THE COURT: That's fine.

Okay.

Do you want to go up and see if they're ready, Karen?

THE CLERK: Sure.

THE COURT: Can we get copies of 2145, 161 and 2808? Or tell us where they are in these binders.

MR. BASKIN: Copies of 2145 and 24 -- sorry, just 2145. I can get the other two.

THE COURT: 2145, 161, and 2808.

2145, is that the interrogatories?

MR. BASKIN: 2145 is a public domain presentation.

THE COURT: Okay.

And 161 is --

12:47 MR. BASKIN: Is an interrogatory response, as is 2808.

THE COURT: All right. Then we don't need copies if they're just interrogatories.

MR. BASKIN: Your Honor, I believe all three are in Leinsing's direct binder.

(Pause.)

(Jury entered the courtroom.)

THE CLERK: Court is back in session, please be seated.

MR. FLYNN: Your Honor, at this time Neovasc rests.

12:49 THE COURT: Any rebuttal case?

MR. SGANGA: No, your Honor. Plaintiff rests.

THE COURT: All right.

So, as we talked about, there will be closing arguments tomorrow starting at 10:00, and then you'll be charged on the specific elements of the claims alleged in this

case.

Doing all the closing arguments and all the jury instructions in one day is a lot. I'm going to give you today the preliminary, not -- not the preliminary charge because they're all equally important but the part of the charge that comes before the specific charge on the claims in the case.

So we try and give you copies -- we will give you a copy of these to have back with you in the jury room.

The upside to that is you'll have them to look at in the jury room, but the downside of that is I pretty much need to read them to you to make sure what you hear today and what you have with you in the jury room are largely the same.

So despite the fact that you're going to have a written copy of these in the jury room, I'm going to ask you to listen carefully as I give them now.

PRELIMINARY INSTRUCTIONS TO THE JURY:

THE COURT: So the general rules of evaluating the case. In defining the duties of the jury, I must first explain these general rules.

It is your duty to find the facts from all of the evidence in the case. I will describe the law to you, and you must apply the law to the facts as you find them. You must follow the law as I describe it whether or not you personally agree with the wisdom of the law. This is a fundamental part of our system of government by law.

In following my instructions, you must follow all of them and not single out some and ignore others. They are all equally important even if I spend more time discussing some points than others. The lawyers are allowed to comment both on the evidence and on the rules of law in the opening and closing statements. But if what they have said about the evidence differs from your memory, it is your collective memory that should control. If what they have said about the law seems to differ in any way from what I am telling you, you must be
12:51 guided by only my instructions. You must not read into these instructions or anything I may have said or done during the course of trial any suggestion from me as to what verdict you should return. Whatever opinion I might have as to what your verdict should be, if I even have one, is utterly irrelevant. The verdict is yours and yours alone to decide as the finders of the facts. While I intend to be as helpful as I can in providing you with the knowledge of the law that you will need to render an intelligent and informed verdict, the law commits this case to your sole determination as the judges of the
12:52 facts.

As you no doubt know by now, the plaintiff in this case, the person or entity who brings the lawsuit, is CardiAQ Valve Technologies, Inc. or CardiAQ for short. The defendants, the parties sued by the plaintiff, are Neovasc, Inc. and Neovasc Tiara, Inc. or together Neovasc.

The plaintiff and the defendants are corporations. Under the law, a corporation is considered a person, and all persons, including corporations, are equal before the law. The corporation acts through its employees, officers, and directors. Corporations are entitled to the same fair and conscientious consideration by you as any other person would be.

Unless I instruct you otherwise, CardiAQ bears the burden of proving its claims by what is called "a preponderance of the evidence." To prove its claims, CardiAQ must prove certain elements which I will describe later, tomorrow, in these instructions. CardiAQ must prove each element of a legal claim beyond a preponderance of the evidence. If you find that CardiAQ has failed to prove any element of a claim, you should find for the defendants as to that claim. Neovasc also bears the burden of proving some of its defenses by a preponderance of the evidence, and I will instruct you about that in the specific instructions that you'll get tomorrow.

As I explained earlier in my preliminary instructions at the beginning of this trial, a preponderance of the evidence is a lower standard of proof than proof beyond a reasonable doubt, which is the very high standard that we apply in a criminal trial. In a civil case like this one, the plaintiff does not need to prove its case by any degree of mathematical certainty. Rather, the plaintiff must produce evidence which,

when considered in light of all of the facts in evidence in this case, leads to you believe that each element of its claim is more likely true than not. To put it another way, if you were to put the plaintiff's evidence and the defendants' evidence on opposite sides of the scale, the plaintiff would have to make the scale tip in its direction for to you find in its favor on any claim. On the other hand, if you find that the credible evidence on a given issue is evenly divided between the parties, that is, it is equally probable that one side is right as it is that the other side is right, then you must decide that issue against the party having the burden of proof, in this case, generally speaking, against the plaintiff.

12:54

Your verdict must be based solely on the evidence and the applicable law. In reaching your decision as to whether plaintiff has sustained its burden of proof, it would be improper for you to consider anything that is not in evidence. You may not base your verdict on bias, prejudice or sympathy. While you might sympathize with one party or the other, your verdict must not be based on that sympathy or influenced by it. Again, you must decide the case solely on the evidence and according to the law.

12:54

I am next going to briefly review for you what is and is not evidence in a civil case.

First, what is evidence?

Evidence was presented at this trial in several ways.

First, evidence was presented through the sworn testimony of witnesses on both direct and cross-examination.

Some of the testimony before you is in the form of a deposition or deposition testimony that's been received into evidence. The deposition is simply a procedure where prior to trial the attorney for one side may question a witness or an adverse party under oath. This is part of pretrial discovery, and each side was entitled to take depositions. You may consider the testimony of a witness given at a deposition and submitted as evidence according to the same standard you would use to evaluate the testimony of a witness who was actually here during the trial.

Evidence was also presented through exhibits, such as documents, photographs, objects, and videos that were identified by a witness or otherwise admitted into evidence during the trial. The numbers assigned to the exhibits are for convenience in order to ensure an orderly procedure. You should draw no inference from the fact that a particular exhibit was assigned a particular number or that there may be gaps in the number sequence.

The quality or strength of the proof is not necessarily determined by the sheer volume of evidence or by the number of witnesses or exhibits. It is the weight of the evidence, its strength in tending to prove the issue at stake that is important. You might find that a smaller number of

witnesses who testified to a particular fact are more believable than a larger number of witnesses who testified to the opposite. The law does not require any party to call as witnesses all persons who may have been present at any time or place involved in this case or who may appear to have some knowledge of the matters at issue in this trial, nor does the law require any party to produce as exhibits all papers and things mentioned by the witnesses in this case. You should not speculate about information that has not been placed before you.

12:56

Now, just like there are things that are evidence, there are certain things that are not evidence and should have no influence on your verdict.

Arguments and statements by the lawyers are not evidence. What the lawyers have said over the course of the trial you might find helpful, even persuasive, but the facts are to be determined from your own evaluation of the testimony of the witnesses and exhibits and from any reasonable inferences that you choose to draw from the facts as you find them.

12:56

Questions by lawyers to the witnesses are not evidence and may only be considered to the extent that they give context or meaning to a witness' answer.

Objections by lawyers are not evidence. Attorneys have a duty to their clients to object when they believe that a

question is improper under the rules of evidence. You should not be influenced by the fact that an objection was made. If I sustained the objection or the question was withdrawn, you should ignore the lawyer's question and any assertion of fact that it might have contained. If I overruled the objection, you should treat the witness' answer like any other.

Testimony that I excluded, struck or I instructed you to disregard is not evidence. If you heard an answer to a question before my ruling sustaining an objection, you are to
12:57 disregard it, that answer is not evidence. Over the course of the trial I provided some limiting instructions indicating that certain testimony should only be used for a specific purpose, and it should only be used for that purpose.

You should also ignore editorial comments made by the attorneys during their presentations, particularly those that tended to characterize the testimony of a witness. Whether or not a witness' testimony was believable in any particular point is a determination only you can make.

Notes, if you have kept them, are not evidence. They
12:58 are a personal memory aid to be used to refresh your recollection of the evidence during the deliberations.

Certain presentations and objects have been shown to you as demonstrative exhibits. These demonstratives, which will not be provided to you during deliberations, are not themselves evidence or proof of any facts.

Again, any labels on exhibits placed by attorneys after the lawsuit started for procedural reasons are not evidence. Those labels include phrases such as "highly confidential," "attorneys eyes only." Again, you should disregard and ignore these labels when you consider such documents, because the labels were not part of the original documents and those labels are not evidence.

Finally, anything you may have seen or heard outside of the courtroom during the course of the trial is not evidence. You must decide the case solely on the evidence received at trial.

There are two types of evidence: direct and circumstantial. Direct evidence is direct proof of a fact usually presented through the testimony of a witness who claims to have been an eyewitness to an event or a participant in a conversation. When you evaluate direct testimony, your decision is fairly straightforward. Do you believe that what the witness told you is accurate? Circumstantial evidence, on the other hand, is proof of a chain of circumstances or a set of facts from which you could infer or conclude that another fact is true, even though you have no direct evidence of that second fact. Although you may consider only the evidence presented in the case, you are not limited to the plain statements made by witnesses or contained in documents. You are also permitted to draw reasonable inferences from the facts

if you believe those inferences are justified in light of common sense and personal experience. An inference is simply a deduction or a conclusion that may be drawn from the facts that have been established. Any inferences you draw must be reasonable and based on the facts as you find them. Inferences may not be based on speculation or conjecture.

You all have experiences in your everyday affairs drawing inferences based on circumstantial evidence. For example, if you woke up in the morning and saw that it was a
12:59 bright and clear day but you also saw puddles of water on the street, you might draw the inference that it had rained during the night even though you slept through it. In other words, the fact of rain is an inference that could be drawn from the presence of the water on the street. As I said, an inference may only be drawn if it is reasonable and logical and not speculative or based on conjecture. If, for example, you saw puddles of water on your street but not on any other street in your neighborhood, then other facts, such as a broken water main or a neighbor's non-functioning sprinkler system might
01:00 better explain the presence of water on your street and therefore a more logical inference might be that a water main had broken. In deciding whether to draw an inference, you must look at and consider all the facts in light of reason, common sense, and your own life experience.

Neither type of evidence, direct or circumstantial, is

considered superior or inferior to the other. Both types of evidence may be considered in reaching your verdict and may be given whatever weight you as finders of the fact deem that particular evidence to be worth.

Most evidence received at trial is offered through the testimony of witnesses. As the jury, you are the sole judges of the credibility of these witnesses. If there are inconsistencies in the testimony, it is your function to resolve any conflicts and to decide where the truth lies. You are not required to believe the testimony of any witness simply because that witness was under oath. You may choose to believe everything that a witness said, only part of it or none of it. If you do not believe a witness' testimony that something happened, that is not evidence that it did not happen, it simply means that you must put that testimony aside and look elsewhere for credible evidence before deciding where the truth lies.

Often it may not be what a witness says but how he or she says it that might influence whether or not to accept his or her version of an event as believable or credible. You may consider factors such as: a witness' character; his or her demeanor on the witness stand; his or her frankness or lack of frankness in testifying; whether the witness was contradicted by anything that he or she said before the trial; whether his or her testimony is reasonable or unreasonable, probable or

improbable in light of all the other evidence in the case; how good an opportunity the witness had to observe the facts about which he or she testifies; and whether his or her memory seems accurate.

In deciding whether to believe a witness, you may specifically note any evidence of hostility or affection which the witness may have toward one side or the other. Likewise, you may consider evidence of any other interest or motive that the witness may have in cooperating with a particular party, including interest in the outcome of the case. It is your duty to consider whether the witness has permitted any bias or interest to color his or her testimony. In short, if you find that a witness is biased, you should view that witness' testimony with caution, weigh it with care, and subject it to close and searching scrutiny. Keep in mind, however, that it does not automatically follow that testimony given by any interested witness is to be disbelieved. There are many people who, no matter what their interest in the outcome of the case may be, would not testify falsely. It is for you to decide, based on your own perceptions and common sense, to what extent, if any, a witness' interest or bias has affected his or her testimony.

In deciding whether or not to believe a witness, keep in mind that people sometimes forget things, get confused or remember an event differently. Memory is not always reliable.

When someone recounts a story twice, it will seldom be identical in every detail unless it is a memorized lie or the witness is possessed with extraordinary memory and recall. Even a truthful witness may be nervous and contradict him or herself. In considering how much significance to give a discrepancy in testimony, you should consider whether a discrepancy pertains to a fact of importance or only to a trivial detail or if it is a willful falsehood which is always a matter of importance and should be considered seriously. It
01:03 is for you to decide, based on your total impression of a witness, how to weigh any discrepancies in testimony. You should, as always, use common sense and your own good judgment.

The testimony of a witness may be discredited or impeached by showing that he or she previously made statements that are inconsistent with his or her present testimony. If a witness is shown to have given inconsistent statements concerning any material matter, you have a right to distrust that witness' testimony in other respects. You may reject all of the testimony of that witness or give it such credibility as
01:04 you may think it deserves.

Sometimes, of course, people make innocent mistakes, particularly as to unimportant details. Not every contradiction or inconsistent statement is necessarily important. Again, you alone are the judges of the witness' credibility.

If you find a witness has made inconsistent statements under oath on earlier occasions, such as in a deposition, you may also consider that earlier statement for its truth or falsity, the same as any other testimony at trial.

A number of documents -- sorry, I missed a page.

In this case, I have permitted certain witnesses who have been qualified as experts to express their opinion about matters that are at issue. Expert witnesses are permitted to testify to an opinion on those matters about which they have special knowledge, skill, experience, and training. Such testimony is presented to you on the theory that someone who is experienced and knowledgeable in the field can assist you in understanding the evidence or in reaching an independent decision on the facts.

In weighing this opinion testimony, you may consider the witness' qualifications, his or her opinions, their reasons for testifying, as well as all the other considerations that normally apply when you are deciding whether or not to believe a witness' testimony. You may give the opinion testimony whatever weight, if any, you find it deserves in light of all the evidence in this case. You should not, however, accept opinion testimony merely because I allowed the witness to testify concerning his or her opinion. Nor should you substitute it for your own reason, judgment, and common sense. You may reject the testimony of any witness, including expert

witnesses, in whole or in part if you conclude the reasons given in support of an opinion are unsound or if you for other reasons do not believe the witness. Again, the determination of the facts rests solely with you.

You have heard testimony from experts who have been called by both sides to give their opinions. The way you resolve a conflict between expert witnesses is the same way that you decide other fact questions and the same way you decide whether to believe ordinary witnesses. You should consider the soundness of each opinion and the reasons for the opinion. You may give the testimony of each of these witnesses such weight, if any, that you think it deserves in light of all the evidence.

A number of documents, photographs, objects, and videos have been received into evidence. You will have all of them with you in the jury room available for your review. You decide the weight, if any, to give any such document, video or other evidence. For example, your may credit all of a document, a portion of a document or none of the document. In evaluating the believability of the statements or assertions in a document, you should consider all the surrounding circumstances. Among other things, you may consider the author of the document, the believability of the author, when the document was created, the purposes for which the document was created, whether the document was created in anticipation of

litigation, whether the statements in the document are contradicted by anything else, and whether the statements in the document are reasonable or unreasonable, probable or improbable in light of all of the other evidence in the case.

So I'm going to stop there for the day. The next set of instructions will be much more specific to the claims in this case.

Anything from either side before I release them for the day?

01:07 MR. SGANGA: No, your Honor.

MR. FLYNN: No, thank you, your Honor.

THE COURT: So we will see you back at 10:00 tomorrow. We'll go right to closing arguments and then charge and then the case will be yours.

Okay?

Thank you all, and have a good afternoon.

Oh, I should say, so now the evidence is over, but it is still -- it is perhaps most critically important that you not make any decisions or talk to anybody about this case. 01:07 Your decision in this case should be based on what you as a group think about and talk about in that room upstairs. So you don't want to have any individual conversations or anybody having any set opinions in their mind until those conversations can start to take place. So don't start making up your mind just because the evidence is over. Keep your open mind, don't

talk to anyone about the case until tomorrow afternoon, and again, no social media.

Thanks very much everyone.

THE CLERK: All rise for the jury.

(Jury left the courtroom.)

THE COURT: All right. So everyone file their motions for judgment.

MR. BOEHM: We have, your Honor, ECF 473 and 474.

MR. SGANGA: We will do so later.

01:08 THE COURT: There's no rush, as long as you get them in today.

We will spend some more time on these instructions. If we get them done in less than an hour, which I guess is possible, we'll just e-mail you, the e-mails that Jonathan has been using are fine, you can come up and get them.

MR. GRAVES: Should we come back one hour after we receive them?

THE COURT: Yes. I'm pretty flexible. If you need more than an hour, take it; if you're done in less than an

01:08 hour, just let me know. I don't have anything else scheduled today except for this.

MR. GRAVES: Thank you.

THE COURT: Okay. So let's leave it like this: We'll either see you at 10 past 2 up here, unless we e-mail you sooner. Okay.

(A recess taken at 1:09 p.m.)

(Resumed, 2:58 p.m.)

THE COURT: All right. A few things. The three exhibits, two of them are interrogatories, right? 161 and 2808. I don't see any basis for excluding those.

MS. LEA: The basis is that they should not be marked as exhibits. They can be read into the record, like they did, but they shouldn't actually be marked as exhibits.

THE COURT: Why?

02:58 MS. LEA: Why?

THE COURT: Yeah.

MS. LEA: Well, simply there's no basis to mark them as an exhibit.

THE COURT: The rules allow them to be marked as an exhibit and they used them for the witness.

MS. LEA: We believe the rules are you can read them into the record but not mark them as trial exhibits.

THE COURT: That's not my recollection of the rule, but I'll take another look at it. Exhibit 2145, your basis for

02:58 keeping that out is that it wasn't included in his expert disclosure?

MR. SGANGA: Not in the body of the report where he set forth his opinions. It was something in a very large sack of materials that had been sent to him. But we never were able to learn during discovery that it was the basis for the opinion

that he presented in his testimony here.

MR. CARSTEN: Your Honor, in several paragraphs of Mr. Leinsing's report he refers to CardiAQ disclosures and presentations at a variety of conferences, including the TVT conference, which is one of the presentations we're talking about here. So he does reference as a general class the presentations in the body of his report.

MS. LEA: Your Honor, I asked him at his deposition whether he considered any documents that were not expressly referenced in his report, and he said no.

02:59

THE COURT: Okay. All right.

MR. BOEHM: I don't believe that's accurate.

MR. CARSTEN: That is not accurate, Your Honor.

MR. BOEHM: I think he said most of the documents but not all.

MR. CARSTEN: He said 99 percent of the documents that he relied upon are referenced in the body of the report. He referenced classes of material, such as the presentations, such as the development history materials. He didn't call those out specifically by Bates number, but he clearly said that he relied upon them.

03:00

Moreover, following the deposition, counsel for CardiAQ sent us an e-mail saying, "Let us know exactly what the one percent are that are missing that he received but didn't review." And we identified three documents of that laundry

list that you saw spooled out in front of the jury before. They never followed up. You know, Your Honor, I would submit that there's been no basis for an objection.

MS. LEA: The three did not include this one, Your Honor.

MR. CARSTEN: So that means he reviewed it and considered it in connection with his work in the case.

MS. LEA: Right. So three out of 1400 they did not use. He had a list of 1400 documents. I said, "Which have you
03:00 reviewed? Have you reviewed all of them?" He said, "No. I've only reviewed the 100 expressly cited in my report."

We followed up with them, and they basically said, "Oh, he reviewed all 1400," after he told me he had not done that at his deposition.

MR. CARSTEN: That's absolutely not true. You saw the man on the stand. He said he spent hundreds of hours working on the case. He did review those documents. And that's what we told them and they refused and failed to follow up.

MR. SGANGA: Your Honor, to put it in perspective, Dr.
03:01 Hillstead, our technical expert, had a report that said developing a medical device is a time-consuming and expensive process. That was in the text of his report. When I asked him what kinds of dollar amounts that entailed, there was an objection that it was beyond the scope of his report. That was sustained. I feel like this is a comparable kind of issue.

THE COURT: Okay. We'll go back and look at them again.

MS. LEA: Your Honor, if I may just say one more thing in marking the interrogatories as exhibits?

THE COURT: Yeah.

MS. LEA: We see those as like a stipulation or complaint that can be read into the record but should not be marked as an exhibit because they contain other things, like our objections and other things that should not go back to the jury. That's why it was appropriate for them to read it in but not to mark it as an exhibit.

MR. BOEHM: The rules we think that provide to the contrary are Rule 33(c) and 801(b)(2), among others.

THE COURT: Okay. We'll take a look at that.

All right. So I've read over -- you all haven't filed your Rule 50 motions yet, right?

MR. SGANGA: Correct.

THE COURT: That's fine. I looked over theirs. Where it's not -- I'm not going to rule on them now. It's not going to change what we send back to the jury. But in particular, the one about the Canadian law, the duty of honesty I think goes beyond just an actual lie. I think it can include knowingly misleading. So again, I'm not going to rule on it now, but that's sort of my thinking on that one.

The other one, the Massachusetts one is more

problematic. I want to give you all a chance to respond to that. It doesn't need to be today or tomorrow. I'm still going to send it out to the jury. But what I did do in response to reading your thing was to break out the damages more so that if for some reason that 93A claim fails, we'll be able to see exactly what the jurors did. We originally -- we've had different permutations of it. You can look at where we ended up. I'm happy to hear you on it. We thought about the lump sum, and then we broke it out just the breach claims and 93A. We've had different permutations of it. But when you look at it, the reason for where we settled out is that I want to make sure if anything ends up failing, we know exactly what the jury was doing.

03:03

I'm not going to go through exactly what we included and what we didn't because I think you'll see it from the draft instructions. But on the verdict form, it's my intention that the 93A be advisory. We added one question about the inventorship but not any sort of claim construction. And again, that's purely advisory. I don't think there's a Seventh Amendment right to that, and I think that the case you gave us is distinguishable, but nonetheless we put in the question as advisory, although I think in a way more limited way than you wanted it.

03:04

So that's where we are. I'm happy to give you as much time as you want with this. It's about 15 pages of text, plus

the verdict form. So how long do you think you'll need?

MR. SGANGA: We would like an hour.

THE COURT: Why don't we come back at 4:00. If we need more time, you can -- I'm not trying to short anybody on this, but let's come back at 4:00 and see where we are. We're also e-mailing them to you.

MR. SGANGA: Okay.

THE COURT: I think we've already e-mailed the instructions but not the verdict form. We haven't e-mailed anything, but we're going to.

03:04

So anyway, that's what we were thinking. So I'll see you all back in an hour.

MR. SGANGA: Very good. Thank you, Your Honor.

MR. CARSTEN: Thank you, Your Honor.

MR. GRAVES: Thank you, Your Honor.

(Recess 3:04 p.m.)

THE COURT: All right. On the two interrogatories, again, I don't have these in front of me, but what we were thinking was that the interrogatories that were highlighted on the screen plus the signature page should go in but not the entire packet. Okay?

04:03

MR. CARSTEN: Thank you, Your Honor.

THE COURT: In terms of the expert disclosure, so we were looking at the report. He says that he's relying on public information at TCT, TVT. What's the total number of

those? Like, if he said TCT and TVT, is that a discrete number, or is that a big number?

MR. CARSTEN: They started at TVT I believe in 2009, and I think it was TCT was -- 2009 or 2010, excuse me. I think there's probably a grand total of four or five of those presentations. And then there were two presentations. There was a corporate presentation as well as a presentation directed by CardiAQ. So two -- so five conferences times two is about ten for TVT.

04:04 THE COURT: This one, who is this guy? It's not a TVT presentation. Who is it?

MR. CARSTEN: It's a fellow by the name of Fitzgerald, and it was a slide that -- I believe Mr. Ratz testified on his direct that he had presented or provided the information to Doctor or Mr. Fitzgerald. I believe there's an exhibit that's been entered into evidence, 2488, which is a compilation of public domain materials that Mr. Ratz testified he had done in connection with his work. One of the pages in that admitted exhibit is the page that we displayed. This one is in color.

04:04 That one is in black and white.

THE COURT: I was just going to say I looked at the exhibit. I had seen that picture many times. It can't be the only place it's been admitted.

MR. CARSTEN: It's not. In fact, the demonstrative that we used that had that image on, Your Honor, had the

example of when it was disclosed in May 2010 and immediately underneath had the same image demonstrated for June 2010 twice at the TVT conference. So part of the reason we're using it and like to have it in evidence is because it demonstrates that there was no secrecy. This was an intentional act of providing and presenting this data, these images, which is their claimed Aha moment, to the world.

THE COURT: And when there's only such a limited number of these TCT and TVT presentations and he says he's relying on those --

MS. LEA: His reliance wasn't limited to CardiAQ presentations. So counsel has narrowed that category down to those ten presentations.

THE COURT: I mean, honestly, I don't think you need it, and I think the safer course is to keep it out. I think it's a very close call, but it wasn't disclosed in the four corners of his report. And, you know, I just think it's safer to keep it out.

MR. CARSTEN: May we just preserve our objection?

THE COURT: You can definitely preserve your objection. To some extent it seems like sort of much ado about nothing. It's already in there. So I just think it's the more -- we're at the end of the trial. At least I think -- I know there's a lot of objections preserved, but I think it's been relatively clean, and I would just as soon keep it that

way. It's not disclosed in the document. I'm going to keep it out.

MR. CARSTEN: I understand, Your Honor. So long as our objection is preserved, that's terrific.

THE COURT: So we are still going through these also. And we just added one thing during the hour-long break, and we basically added --

We haven't given this to them yet, right?

So what we basically added was CardiAQ's final jury 04:06 instruction number 17 with a corresponding entry on the verdict form. And it basically looks just like we did for the 93A.

So I think what I'll do is just read it to you when we get there so you can see it in context, but we made that one addition. I think the easiest way to do this, unless somebody has a better suggestion, is that we just march through this page by page and you can let me know what your issues are with it.

Anything on page 1?

MS. LEA: Not from us.

04:07 THE COURT: So I know going through this way, we can do sort of a catchall at the end if there's anything that you think is not in here at all that should be, or if you want to raise it. Either way, I just want to get through the whole thing.

How about page 2?

MR. BOEHM: You're talking about the jury instructions?

THE COURT: Yes.

MR. BOEHM: With respect to the breach of contract, which starts on page 1 and continues onto page 2, I think before trial began -- is it all right if I sit while we work through these?

THE COURT: Sure.

MR. BOEHM: Before trial began, Your Honor made two legal determinations construing the contract, and we would want to instruct the jury on those two points. The first is that there's no contractual duty to not compete or no noncompete in the terms of the NDA. Second, no contractual duty to disclose any intention to compete. We think it's important to include that in the instructions with respect to the breach of contract cause of action.

THE COURT: I mean, we tell them to -- we tell them to read the nondisclosure agreement and give all the words their plain and ordinary meaning, and I think both of those things are -- at least the duty not to compete is in there. Right?

MR. BOEHM: The absence of a duty to compete is, hopefully, plain.

THE COURT: Well, it says they can compete as long as they develop the thing independently.

MR. BOEHM: Right, right. There's an expressed

allowance to compete by independent development, right. We've heard throughout trial a number of allegations through questions and whatever else that --

THE COURT: I mean, so I want to try and keep these instructions as simple as we can and with as little sort of argument in there as we possibly can. And we say clearly that there's only two issues related to the breach. One is the use of the information for its own benefit and two is the level of care. So I don't think either of those two concepts are really implicated by what the jury is going to be thinking about.

MR. BOEHM: That point is taken, Your Honor. We would still --

THE COURT: That's fine. You're welcome to preserve. But I don't think that needs to be in here. Do you have a view on that?

MR. SGANGA: We think -- we agree with Your Honor's points. There's a lot of things not in the contract and having those enumerated provisions we think does focus the issues if they need to be.

04:09 THE COURT: Okay. Anything else on that?

MR. FLYNN: On that point, Your Honor, with respect to closing arguments?

THE COURT: Yeah.

MR. FLYNN: May we incorporate into our argument the notion that there's no noncompete?

THE COURT: Yes, yes.
MR. FLYNN: Thank you.
THE COURT: How about the breach of duty of honest performance? I know there's a motion pending on that, but in terms of the instructions?
MR. BOEHM: Other than the pending motion and we need to get you the exhibit numbers.
THE COURT: Yes.
MS. LEA: I have the exhibit numbers, Your Honor.
04:10 THE COURT: Okay.
MS. LEA: The non-disclosure agreement is Exhibit 371. The purchase orders are Exhibit 156, 1170, 1195, 1211.
THE COURT: Okay.
MR. BOEHM: We'll double-check those on our end as well.
THE COURT: That's fine. You can just let me know in the morning.
All right. I assume there's lots to talk about on the trade secrets.
04:11 MR. GRAVES: We have two points, Your Honor. The first one may just be a typo. On page 3, there's a list one, two, three, toward the bottom of the page.
THE COURT: Yeah.
MR. GRAVES: The third one reads, quote, "Neovasc has the trade secret through improper means." I thought that that

might mean, "Neovasc has misused," or "has wrongfully used," or some other verb like that.

THE COURT: Yes, that's right. I'm not sure it's a typo but it's certainly a mistake.

MR. GRAVES: Then I have just one substantive point on the trade secret thing, which is, in our proposal we had proposed an instruction to inform the jury in some way, shape or form that a trade secret claim should be identified with particularity while identified. There's different ways to say the same concept. The wording doesn't matter so much. It's just the wording itself, that is a live issue in the case. We were hoping to get a sentence there about the idea that a trade secret claim should be identified with reasonable detail, reasonable particularity, whatever the right wording is.

THE COURT: I get the idea. I'm just not sure it belongs in a jury instruction. I'm not sure it's something that the jury has to find.

MR. GRAVES: Well, I think the courts here in Massachusetts have ruled a number of times that it is something that the plaintiff needs to do, and it is a live issue in this case. In other words, there is a dispute about that.

THE COURT: Let me think about that.

MR. SGANGA: Your Honor, we think we addressed that with the motion in limine.

THE COURT: I think that's right, but let me think

about it.

MR. SGANGA: We think the missing verb there in section three is "used."

MR. GRAVES: That's fine with us.

MS. LEA: And I do need to add on the exhibit number, Your Honor, again, we believe the entire revised trade secret disclosure should be included, which would either be Exhibits 1157 through 1219 or they're all together in Exhibit 573.

THE COURT: I'm sorry. Give me those numbers again.

04:13 We have not made a decision on that. I mean, I take your point that it's all included, but it also seems -- I mean, the trade secrets are defined as six different things.

MS. LEA: It's Exhibit 1157 through 1219, or they're in one exhibit as Exhibit 573.

THE COURT: Okay. We'll figure that out tonight, too.

MR. BOEHM: Our position is unchanged on that. I would note there's a typo here, though. It says 1057, and the one that we had said was 1157.

THE COURT: Okay. Anything else on the trade secrets?

04:14 Unfair and deceptive conduct in trade or commerce, 93A.

MR. BOEHM: We have a couple of things on that. One we'll probably get to later in the damages section, but the first, on page 7 there's the instruction which I think comes from, among other places, the *Lance* case that Your Honor cited

in one of the orders before trial. At the end of that, "A practice or act is unfair if it is immoral, unethical, oppressive or unscrupulous;" semicolon. We believe that should be an "and" that comes after that. We pointed that out in one of our papers, the long line of cases that that's actually a conjunctive requirement, not a disjunctive requirement, which makes sense if you read that an injury element standing by itself is far too broad for anything to be unfair.

THE COURT: I think that's probably right, but let me just go back and look at it. What we added -- so we added under Element III -- this didn't get sent to them?

I see. I get it. I get it. Sorry. I'm on the wrong page.

On page 6, under Element III, Roman numeral III, about Element III, there's a paragraph that says, "Examples of improper means." We'll get you a copy of this later, but we added to that. It's just like the 93A. "The verdict form includes an additional question about this claim. If you find that the three elements described above have been met as to any alleged trade secret and that therefore Neovasc did in fact misappropriate CardiAQ's trade secrets, you should indicate whether CardiAQ proved by a preponderance of the evidence that Neovasc's actions were willful, intentional or knowing."

MR. BOEHM: Sorry, Your Honor. You're going to add that in?

THE COURT: Yeah. We added that in. It's really -- it's to take up the gist of CardiAQ's instruction request 17.

It's for the punitive damages on the trade secret.

MR. BOEHM: Sure. I'll speak to that briefly.

I don't believe punitive damages are possible in this case because they're only seeking a royalty measure. The *USM* case, the cite on that is 392 Massachusetts 334. It's a Supreme Court case from 1984. And it construed the trade secret statute in a way that only the lost profits measure of 04:16 damages would entitle a plaintiff to enhanced damages. It excluded the possibility of unjust enrichment, and by extension it also said this is meant to be construed narrowly, squarely indicating that a royalty wouldn't work either, so there's no basis for the instruction.

THE COURT: Now I'm wondering if that's why we didn't include it the first time.

What's your view on that? Are they right?

MR. SGANGA: Well, ultimately Your Honor can consider a number of factors in deciding whether to enhance damages, so 04:17 we don't see why we shouldn't get that added input from the jury about willfulness, and this is an issue -- those arguments can be preserved and raised if and when we're dealing with the enhancement issue before the Court after the verdict.

THE COURT: Okay. We'll look at that one tonight, too, after you all have left.

MR. SGANGA: Before we move on, Your Honor, if I may?
THE COURT: Yes.
MR. SGANGA: I just wanted to be clear on the proposal about changing the "or" to the "and" because we've got a few different clauses that use the "or" and it should be "and," and it should be "or" in some places.
THE COURT: So far the only place I've tentatively changed it is right there. I have to go back and look at the case, but I did just read it during the break. I'm pretty sure
04:17 what they just said is right.
MR. SGANGA: So "and causes substantial injury."
MR. BOEHM: That's where we're at, yeah. I think the *Lance* case you cited actually got that right also, but there's a host of cases that have it as the conjunctive, and we put that in one of our filings.
THE COURT: So you want "and" between "oppressive" and "unscrupulous"?
MR. BOEHM: No. "And" after the semicolon.
THE COURT: Okay.
04:18 MR. SGANGA: But to be clear now, three lines later there's another "unscrupulous or otherwise unconscionable." We believe that should remain as an "or."
THE COURT: Right. I think that's right.
MR. BOEHM: Yeah. Also, just with respect to 93A generally, in view of the JMOL, presenting this at all, even in

advisory form, we think could be prejudicial.

THE COURT: Okay.

I think the rule allows that motion to go unruled on until after the jury verdict, and I'm going to submit it to them advisory. But I hear your objection. It's preserved.

Anything else before we get to damages?

MS. LEA: No, Your Honor.

THE COURT: All right. How about damages?

MR. BOEHM: I can jump right into the 93A. The 93A damages are actually narrower in section 11. It's defined in the statute as loss of money or property, real or personal. And the Massachusetts courts have construed that quite literally. There's a model civil jury instruction about that and a number of cases and things. And so to speak about it as if it were a broader loss, which would encompass more things than the loss of money or property, real or personal, we would want to cabin that in in accordance with the language in the statute and the case law.

THE COURT: All right. We'll take a look at that.

What else? Anything else on damages?

MR. GRAVES: Not from us, Your Honor.

MR. BOEHM: Not on our side, Your Honor. Thank you.

THE COURT: The exhibit number on the patent referenced on "Additional Factual Determinations"?

MR. SGANGA: 565 for that, Your Honor.

THE COURT: You're welcome to check that tonight. We'll give you another draft redline tomorrow morning.

MR. CARSTEN: Your Honor, we don't believe that the jury should be receiving an instruction on the inventorship issue at all.

THE COURT: Right.

MR. CARSTEN: And I think, Your Honor, there are several issues we have with this. We have laid them out for the most part in our papers. I'll note certainly there's a typo here. It's "Mr. Ratz" and not "Dr. Ratz."

THE COURT: Oh, yes.

MR. CARSTEN: No offense if Mr. Ratz is in the courtroom.

But there are also -- I think that your attempt here, Your Honor, while appreciated, presents to us the real core of the issue, which is the likelihood of confusion. Today you charged the jury with the burdens of proof -- the burden of proof they're going to be applying in the case. Now all of a sudden out of left field we have an additional factual determination, which is subject to a different burden of proof.

THE COURT: They had me cover that this morning, so I don't think it's out of left field. It's just advisory. I take your point, but I don't think it's that confusing.

MR. CARSTEN: Then, Your Honor --

THE COURT: It's no more confusing than many of the

other issues they're going to be wrestling with in this, right?

MR. CARSTEN: I think they have plates full without adding anything more to it, frankly, Your Honor.

In addition there are deviations in here between what the standard is. So there's a section which says, "not insignificant," and then later on it says "significant."

THE COURT: Hold on. Are you in --

MR. CARSTEN: I'm in the "Additional Factual Determinations" at page 12, Your Honor. It's about eight or so lines up. It says, "Not insignificant." Bridging the line break down at the bottom, it says "significant."

In our papers, we identified that it has to be significant to the contribution as measured against the full scope of the invention. For all the reasons we assert in our paper filed last night or a day or so ago, you can't know the full scope of the invention unless you actually construe the claim. The file history, for example, which is the back and forth between the Patent Office, that's intrinsic evidence. That's stuff that we need to consider. The jury hasn't seen any of that. They haven't had any discussion of that. All they've had discussion of, Your Honor, is opinion testimony from witnesses that is extrinsic evidence and disfavored under the law.

In addition to that, there's the requirement that the putative inventors to be named must have appreciated and

recognized the importance of their contribution to the claimed invention at the time.

THE COURT: You're not really disputing that fact, are you?

MR. CARSTEN: Well, there's been testimony left and right about no rotation required and no targeting the trigones --

THE COURT: Doesn't inventorship just go to the conception of the idea?

04:23 MR. CARSTEN: But this is an idea for using trigonal tabs to hit upon --

THE COURT: That's just one aspect of it. The actual idea encompasses something much broader than that.

MR. CARSTEN: Well, Your Honor, there's been conflicting testimony on that, I think. I believe that Mr. Lane testified that that was the core invention. That was really the heart of the invention here. That's the inventive aspect. And really, by examining that, you need to -- the case law in our view means that you need to appreciate what's

04:24 actually inventive here.

So in terms of being an inventor, if you just contribute things which you've published and things which are in the prior art, that's not an inventive contribution. And here we've provided ample evidence that what Mr. Ratz and Dr. Quadri say they contributed to us, that is this between the

chords, behind the leaflets and touching the anchor -- touching the annulus, excuse me, was well known in the prior art. In fact, they disclosed it themselves.

Even if we don't get that far, we have a May 2010 disclosure of that by virtue of the picture of that TVT, the first TVT conference. There's a question that's arisen about the entitlement of the priority date. So we have an application that Neovasc filed in May, which Mr. Lane testified to and said that that doesn't include the things I thought of afterwards, which include this trigonal anchoring concept. And in October, there's a subsequent patent priority application which is filed.

So whether these claims find complete support of either of those documents is going to become relevant to assessing whether the purported contribution that Mr. Ratz and Quadri now say they now made to this invention is actually in the prior art or not.

So I think for all these reasons, Your Honor, it's confusing to the jury. And we have very serious issues about the way that the law is being provided to them here and described to the jury here.

THE COURT: I mean, we'll take a look at this again tonight, although I'm inclined to leave it as it is. We've been back and forth about this a number of times. It's only advisory. I take your point about it being confusing. We're

trusting the jury with this. Once I'm trusting them with this, I do trust them with this as well. But we'll take another look at it tonight. I'm happy to revisit it, but that is one we're not likely to change our minds on. We've been over it a number of times already. We'll make the corrections. I see what you're talking about. One way or another we'll standardize this, but I think we're going to leave it in as an advisory question --

MR. CARSTEN: Your Honor --

04:26 THE COURT: -- in some form or another. We may futz with it tonight, but I think we're going to leave the factual question in there.

MR. CARSTEN: We'd like to preserve our objection, Your Honor, to that.

Then I think also the way that -- if we get to that and the manner in which this is presented in the jury verdict form is also, we believe --

THE COURT: Okay. We'll get there in a minute.

Look, I may be wrong about this, and I'm happy to hear 04:26 you on it at the appropriate time. You can brief it if you want. And it might be just my simple little mind. But I don't see how the inventorship and the trade secret claims go in opposite directions, just as a matter of practicality. I understand the law is different and the scope of the two -- the scope of the two statutes is different, but I just -- I just --

if they didn't steal the trade secrets, I don't think there's a good claim for inventorship.

MR. CARSTEN: I agree with that entirely.

THE COURT: I'm shocked to hear that. So I think the two rise and fall together. But you know, I'm -- I do think the case that you've submitted is distinguishable. But again, I think the safer thing is to submit the factual determination to the jury, but we'll look at it again. Maybe we'll narrow it down a little bit.

04:27 MR. SGANGA: I do just want to note, Your Honor, we do think there may be some situations where they don't rise and fall together, but I don't think that changes the decision at hand.

THE COURT: An inventorship is for me to decide. Again, I'm willing to be educated on this as we go. It doesn't have to have happen today. But just my simple way of looking at it -- I understand that there are circumstances. I don't see this case as encompassing those circumstances.

MR. SGANGA: I think where we're in agreement is

04:28 certainly there's a lot of overlap that's part the Seventh Amendment issue we've been raising. So again, we'd like it to go to the jury.

THE COURT: The case that you gave, what was it called?

MR. SGANGA: *Shum*.

THE COURT: I see that case as going to the jury because it's almost like a res judicata effect on the question of fraud. If the Court was deciding it first, then you had this strange sort of preclusion issue. This is not so much the same as that. But it is a factual determination. We're sending the case to the jury anyway.

But I'll take another look at it tonight. I suspect at the end the day we may change this around a little bit. We spent so much time making the decision about whether or not to send it the jury that it's gotten less editing than anything else in here because it was the last thing written. So I'm happy to take a look at it, but I think at the end of the day there will be some question that goes to the jury on it.

But again, the decision is ultimately mine, and I just don't see myself going any differently than the jury goes on the trade secrets issue. I don't know. Either I'm very smart or very simple because -- I'm not sure my law clerk agrees with me on that interpretation, but that's as a practical matter how I see it coming down.

04:29 Is that everything other than the verdict form?

All right. The verdict form, we added -- the new question 7 largely mimics the old question 9.

"Did CardiAQ prove by a preponderance of the evidence that Neovasc's misappropriation of trade secrets was intentional, willful or knowing." We'll get you a copy of

that.

MR. BOEHM: Again, the point that we brought up earlier, that that's not a live issue since they're not seeking lost profits damages.

MR. GRAVES: We do have another comment on the trade secret part of the verdict form, if that's where we are right now.

THE COURT: Yeah.

MR. GRAVES: As it's written right now, there's sort
04:30 of a single vote: Did they misappropriate, which sort of encompasses everything. We think there ought to be a separate vote first on secrecy, meaning is there a trade secret, and then on misappropriation, because one logically follows or precedes the other one. It's anecdotal, obviously, and doesn't govern, but in other jury trials we've been involved with, there's usually the split question. So we would suggest cutting and pasting the same chart but having a question about secrecy and then about misappropriation.

MR. SGANGA: In the instructions, Your Honor, you are
04:31 laying out those elements.

THE COURT: Yeah. I don't know why I would do that. The fundamental difference between your verdict form is you wanted it broken down way, way more than they did. It's not my inclination to do that, other than as we might need it broken down to preserve the verdict depending on what happens on

appeal of some of these outstanding issues. But I think we've instructed in that if they find that you misappropriated a trade secret, then they have to find that there was a trade secret to misappropriate.

MR. GRAVES: Thank you, Your Honor.

THE COURT: Anything else?

MR. SGANGA: Minor typo in the heading, the Roman numeral II heading there.

THE COURT: Yes, you're right.

04:31 MR. BOEHM: Sorry. There's a "Dr. Ratz" going on in here, too.

THE COURT: Yes. There's a "Dr. Ratz."

So one other thing that I was sort of wrestling with and we don't have an answer to, I'm happy to have your input, I wondered if we needed to or should capture someplace in either the instructions or the verdict form that their maximum verdict was $90 million. So if they gave you 90 million on everything, it would be easy. We'd just give 90 million. And if they gave, you know, zero on everything, that would be easy, too.

04:32 But I'm worried about if we get sums of money on some of these that are less than 90 million. Like if there was a 20 million plus a 25 million. At that point are we to add it up for 45 million, or are we to leave it -- just pick the higher? So I'm not sure how to capture that possibility in here. We could give them the instruction that the amounts are not going to be

aggregated.

MR. HORNE: Your question is regarding the trade secret claims?

THE COURT: Well, it's to all of them. If they gave you 90 million on each of them, you would get 90 million. If they gave you zero on everything, you'd get zero on everything. But if they gave varying amounts that between them did not add up to 90 million.

MR. HORNE: I understand the question now. I'd have to mull this over for a few minutes before responding.

04:33

THE COURT: Start mulling.

MR. SGANGA: Your Honor's suggestion then is to give some instruction to the effect of "Treat each one as standing alone as if none of the causes of action resulted in any damages"?

THE COURT: I don't know. You've presented it, for better or for worse, with one lump sum figure. So if they gave 45 million and 45 million, I would assume they were just dividing it up to get to the 90. What if they pick, you know, 20 million plus 25 million?

04:33

MR. SGANGA: Well, the testimony from our damages expert was that the number was not intended to be cumulative across the causes of action.

MR. HORNE: That's if they gave 90 on each one.

MR. SGANGA: On each one.

MR. HORNE: I think it would be cumulative, unless it was at 90.

MR. FLYNN: We disagree.

THE COURT: I mean, we can -- what I thought was that we could either put something in the instructions themselves or we can put it into the verdict form. But I think at some -- because I know if we come back with a 20 and 25, right, you're going to say we should add them up and you're going to say take the higher. So we're going to deal with it before we're in that situation.

04:34

MR. FLYNN: Your Honor, I think it's clear from the evidence we would take the higher. I think were the jury to make a calculation error, you could deal with that on a remittitur, but I think that's the state of the proof based on the way the damages were presented.

MR. HORNE: Your Honor, that's why we think maybe one question on damages would be better so we don't run into this situation.

THE COURT: I'm definitely not doing that because then what happens if the 93A claim doesn't exist or you want enhanced damages on the 93A? I have no way of figuring out how much they contributed to the 93A.

04:34

MR. FLYNN: Your Honor, I know you've already ruled on this, and I'll be very brief. But I think that precise issue is a very good reason why the risk in complication of

submitting 93A for advisory findings outweighs the utility here. I think in light of the JMOL, that law respectfully is very strong. I think it's a pretty clear issue. There's a very high likelihood that ultimately that claim is not going to survive, and it's complicating. And it's potentially prejudicial to have the jury be instructed on deceptive acts when we don't think ultimately that's going to be before them.

MR. SGANGA: Your Honor, I think we have that issue with the breach of contract claim already and the trade secret claim already. The fact that we have multiple causes of action and the 93A claim doesn't add any more complication.

THE COURT: I bumped into Judge Young in the hallway last night, and he thought I should include it as a binding jury finding and I disagree with that. But I mean, I think there is enough of the 93A to get to the jury, but they've raised a significant issue on the Massachusetts nexus; they definitely have.

So, you know, I don't want you to have to brief that overnight tonight and have anybody rush into a hurried decision on it. I know everybody likes the 93As in. Juries rarely find them. So do you want it to go to the jury?

MR. SGANGA: Yeah, we would like it to go to the jury, Your Honor, yes.

THE COURT: So then let's sort out how we're going to -- I'm not going to put in one number because if the 93A fails,

I'm not going to jeopardize this verdict.

MR. SGANGA: Could we have a moment to confer?

(Plaintiff counsel confer.)

THE COURT: Jonathan just pulled a case of a contract in the 93A claim. And you basically can't have duplicative damages where the two claims are based on the same set of facts.

So in this case, what saved -- the jury gave different amounts for the two, and what saved the verdict was the fact the judge had given some, although not very coherent, instructions on duplicative damages.

THE CLERK: They're all distinguishable.

THE COURT: So either the jury -- well, the claims were distinguishable?

THE CLERK: Yes.

So the amounts were different but they made some argument that the claims were distinguishable on different factual bases. So I think we have to do something on duplicative, but I think what that means is that -- because these two breaches are based on the same -- the 93A and the contract claims would be based on the same conduct. So if you had a -- so I guess if you had one amount for 93A and one amount for the breach of contract, you would just take the higher.

MR. SGANGA: That's the way we're viewing it as well,

Your Honor. So an instruction to the effect that the individual damage awards for the individual causes of action are not to be viewed as added together, they're not to be cumulative, that would be consistent with our view. And I think that's what Mr. Flynn was suggesting as well.

THE COURT: He doesn't look like that was what he was suggesting.

MR. FLYNN: It was not.

THE COURT: So we could lump together the -- I mean, the contract and the 93A are really, it's a compensatory damage theory and trade secret is a reasonable royalty theory. They're not the same. I think those two have to at least be broken out. I'm wondering if you could lump together the contract claims and the 93A since the factual for basis for both claims is the same.

THE COURT: (To the clerk) There's a different damages theory. Is it the same law on duplicative damages?

THE CLERK: I don't know, but it --

THE COURT: Let us take a look at that. If we find the same law on duplicative damages with the trade secret versus the contract when it's the same underlying basis, we go back to one amount. But I really want to make sure that if something fails here that someone can go back and figure out what this jury did.

MR. FLYNN: Your Honor, I think another complicating feature is we've cited authority and we intend to reserve our objection on the idea that the 93A -- a theoretical 93A violation can't be based on a failure to disclose when there's no contractual or common law duty to disclose. And as the material we're working on now doesn't address that directly, we've got other problems that might put the verdict in jeopardy. I think the sum of all these problems --

THE COURT: Put the 93A verdict in jeopardy? That's advisory anyway.

04:43

MR. FLYNN: But I think the failure to segregate them and clearly delineate what might constitute a 93A violation as opposed to what might constitute a breach of contract promotes jury confusion and is prejudicial to the defendant. I think we're still in a situation where any utility from an advisory finding is far outweighed by the complicating factors.

THE COURT: All right. We'll take a look at this all tonight and let you know where we come down on it in the morning.

04:44

MR. BOEHM: Thank you, Your Honor.

THE COURT: Anything else tonight?

We'll get you a redline in the morning. The jury is coming in at 10:00. So whenever you want to come after 9:00, we'll have a redline version for you. And then I'll come back out on the bench around 9:30 and we can sort out where we are.

MR. BOEHM: Your Honor mentioned the possibility or the protocol for post-trial briefing on inventorship or other things. Is that something where you would want the parties to confer and propose something to you, or is this something you want to give us guidance on?

THE COURT: Let's wait. I think we should wait to see what the verdict is because those issues can -- we'll see what happens. I mean, we'll just see where the verdict is before we decide what's left and what we're going to do with them.

04:45 MR. BOEHM: Okay. Thank you.

THE COURT: I mean, if the jury doesn't find a contract -- a breach, I'm not likely to find 93A. And if they don't find trade secrets, I'm not likely to find inventorship. I just think those groups of claims rise and fall together. I know no one's going to comment on that now.

MR. BOEHM: It seems like the conversation has concluded, Your Honor.

THE COURT: No, it's not that. It's that everyone's position on that is going to be grossly impacted by the

04:46 verdict, right? So I'm not going to ask you to commit to it now. That's one of those examples of where you stand being greatly influenced by where you sit. I'm not saying I have a closed mind to it, but those are going to be two uphill battles, that you'll get inventorship without theft of trade secrets or you'll get 93A without the contract breach.

All right. We'll take a look at the issues that are left. We'll give you clean copies in the morning, and then we'll have one more session. You guys are still at two hours? You'd like an hour 45 to two hours? That's a long time to have this jury sit. You all know that, right? All those studies that show the human attention span is about an hour.

MR. SGANGA: We'll work on editing tonight, Your Honor.

THE COURT: You can have the two hours. You're both well within your time limits as far as I can tell. I'm just saying it's a really long time to ask them to pay attention to you. So I'm glad I've already gotten half the charge out of the way. I don't need them to pay attention to me for that long.

All right. Thanks, everyone.

MR. SGANGA: Thank you, Your Honor.

MR. GRAVES: Thank you, Your Honor.

MR. BOEHM: Thank you, Your Honor.

(Adjourned, 4:46 p.m.)

C E R T I F I C A T E

UNITED STATES DISTRICT COURT)
DISTRICT OF MASSACHUSETTS) ss.
CITY OF BOSTON)

We, Lee A. Marzilli, Debra Joyce and Kelly Mortellite, Official Federal Court Reporters, do hereby certify that the foregoing transcript was recorded by us stenographically at the time and place aforesaid in Civil Action No. 14-12405-ADB, CardiAQ Technologies, Inc. v. Neovasc Inc., et al, and thereafter by us reduced to typewriting, and is a true and accurate record of the proceedings.

Dated this 17th day of May, 2016.

/s/ Lee A. Marzilli, RPR, CRR

/s/ Debra Joyce, RMR, CRR

/s/ Kelly Mortellite, RMR, CRR